

D. A. DICKINSON.
Car Starter.

No. 108,460.

Patented Oct. 18, 1870.

fig: 1

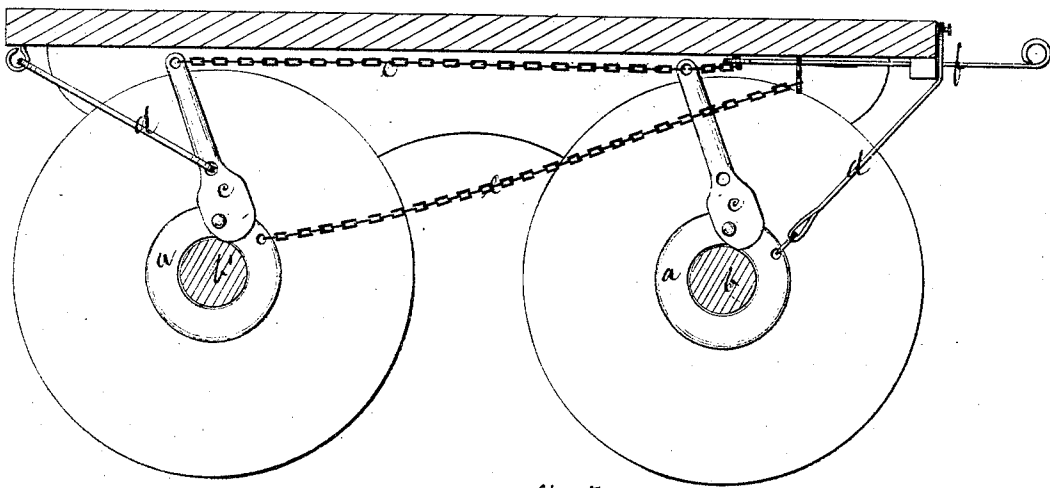


fig: 2

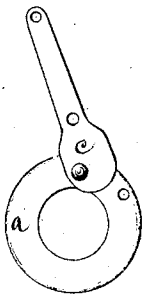


fig: 3



Witnesses

Geo C Lambright
Robert Everett.

Inventor

David A. Dickinson
by Atty Geo. P. Everett.

United States Patent Office.

DAVID A. DICKINSON, OF BALTIMORE, MARYLAND.

Letters Patent No. 108,460, dated October 18, 1870.

IMPROVEMENT IN CAR-STARTERS.

The Schedule referred to in these Letters Patent and making part of the same

To all whom it may concern :

Be it known that I, DAVID A. DICKINSON, of the city of Baltimore, in the State of Maryland, have invented a certain new and useful Improvement in Starting Cars; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawing, which form part of this specification, and show my invention attached to the bottom and running-gear of a street-car,

Figure 1 being a longitudinal section;

Figure 2, a side view of the ring and lever, and

Figure 3, a vertical section of such ring and lever.

In all of these views like letters are used to designate like parts.

The object of this invention is to overcome the great difficulty so often experienced in starting a loaded car, where, while the weight is not too great for the horses when the car is in motion, it requires unusual efforts to set in motion.

I meet this difficulty by applying the first power exerted by the horses directly to the axles of the cars, by means of a ring and lever, as will hereinafter more fully appear.

The means used for carrying out my invention, and which are here shown applied to a street-car, may be adapted to any car where the power for giving motion is suitable.

A ring, *a*, is placed around the axle *b*, there being sufficient difference between the diameter of the ring and axle as to allow some play of the ring on the axle.

Where the car is designed to have the power reversed, as in a street-car, there will be two such rings around each axle, with two sets of means for actuating them; but, where the power will always be applied to one end of the car, one ring to each axle only will be required.

To each of the rings *a* a lever, *c*, will be attached, either by the forked ends thereof embracing the ring,

as shown by fig. 3, or by the end of the lever being fitted in a slot in the ring.

The lever is constructed with its short arm curved eccentrically to its fulcrum.

A spring, *d*, will be attached to the lever, as shown, on the axle *b*, or to the ring, as shown on axle *b*, which spring will be so attached to the bottom or other part of the car that its contraction will tend to release the lower end of the lever from its pressure on the axle, and restore the apparatus to the position required for starting the car.

Chains *e* will also be suitably connected to the levers and to draft-bar *f*, for acting upon the levers, and producing pressure of their lower ends on the axles.

Supposing the single-tree to be affixed to the end of the draft-bar *f*, the car being at rest, the forward movement of the horses, drawing out the bar *f* through the chains and levers, will force the lower end of the levers to press upon the axles, and thus directly produce rotation of the axle.

The axle, thus being put in motion, gives a forward movement to the cars, the pressure of the levers on the axles ceasing as soon as this movement is established, the ring, being of greater diameter than the axle, allowing of this action of the levers and axles.

What I claim as my invention, and desire to secure by Letters Patent, is—

The combination of the ring *a* and lever *c*, both constructed as described, with the springs, cords or chains, and levers connected therewith, for operating the same upon the axle of the car, as herein set forth.

This specification signed this 26th day of April, 1870.

DAVID A. DICKINSON.

Witnesses:

THOS. T. EVERETT,
EDM. F. BROWN.