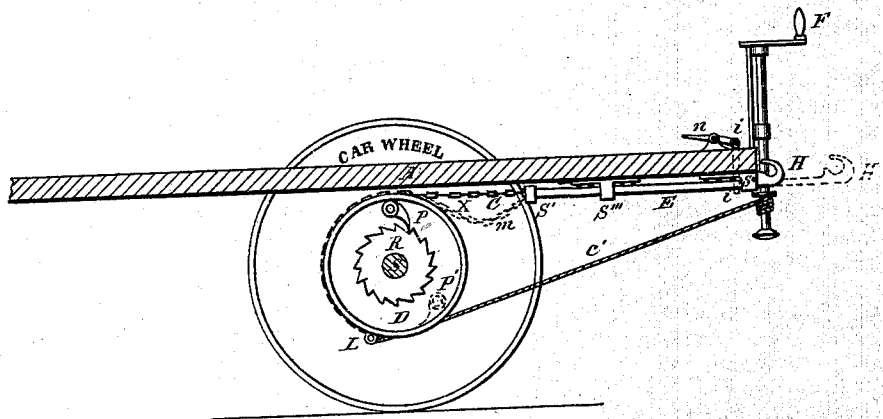


G. LOWDEN.
Car-Starters.

No. 139,721.

Patented June 10, 1873.



Witnesses
James P. McLean
Anne A. McLean

Inventor:
George Lowden

UNITED STATES PATENT OFFICE.

GEORGE LOWDEN, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN CAR-STARTERS.

Specification forming part of Letters Patent No. **139,721**, dated June 10, 1873; application filed December 9, 1871.

To all whom it may concern:

Be it known that I, GEORGE LOWDEN, of the city of Brooklyn, in the county of Kings and State of New York, have invented a certain novel and useful Improvement in Railroad-Car Starters, capable of being used as brakes; and I hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawing, which is lettered to correspond with and form a part of the specification.

In order that the public may fully understand the nature of my improved invention, and those skilled in the mechanic arts be enabled to construct and operate the same, I will describe it as follows, to wit:

Figure 1 is a sectional drawing through the middle of the bottom of a railroad horse-car, showing a vertical section of a drum, D, which freely revolves upon an axle-tree, S, of the car A at or about the middle thereof, in either direction, by means of the chain C, which passes over the top of the drum to the lug L, to which the end of the chain is fastened, so that when the band, rope, or chain C' is unwound by turning the crank or handle F, and raising the pin *i* by placing the foot upon the lever *n* when the car is ready to start, the draft of the horses upon the hook H will cause the draft-bar to be drawn out or extended to H', and the drum D, with the pawl P, will be drawn over until the pawl lets go of the ratchet R and falls in the position shown in dotted lines at P', at or near the bottom of the drum D, which has its preponderance of weight at X, to assist in holding the pawl in gear with the ratchet until set free, as above.

After the car is in motion the draft-bar E remains extended with its stop S' against loop S'''. It (the rod) may then be drawn back through the loops S'' S''' by turning the crank F, which winds up the band C' until the pin *i* is dropped in its place to hold the draft-bar E in the position shown in the drawing. The handle F may then be reversed to set free the band C', which will cause the chain C to relax and drop in the position shown in dotted lines at *m*. The

pawl will also drop down to P', so that the ratchet will revolve freely independent of the drum or pawl.

In case the car is stopped while going up a heavy grade, the above-described apparatus may be used in the capacity of a brake by simply keeping the band C' wound up tightly, and stop-pin *i* in its seat, as shown at Fig. 1; and when the car is ready to start again the pin *i* is drawn up by the foot-lever *n*. Band C' being unwound, the draft-bar is set free to act in the capacity of a starter, as above set forth.

I am aware that a loose pulley, provided with a chain secured to the outer periphery thereof, and that a ratchet secured around the axle-tree of the car upon the inside of said loose drum or pulley, that is also provided with a pawl which is operated by the combination of eccentrics and transverse pins, is set forth and claimed for starting cars only in R. T. M. Wells' patent, numbered 45,778, consequently I disclaim the above combination as constituting a part of my present invention; but the novelty of this application consists in the construction of a car-starter that may also be employed as a brake while ascending a grade, if necessary, by means of a rigid draft bar or rod, E, provided with a hook, H, and operating through stationary loops under the car by means of the take-up band C', when operated by the brakeman turning the crank F and raising the stop-pin *i* with the foot-lever *n*, in combination with a loaded drum, having one side cast heavier than the other, and self-acting pawl that will fall in and out of gear with the ratchet upon the axis of the car by its own gravity, and thus regulate the movements of the loose drum and its flexible bands C and C' for the double purpose set forth, I believe to be new and useful to the public; therefore,

What I claim as new and useful, and wish to protect by Letters Patent of the United States, is—

A car-starter capable of being used as a brake, by means of a draft bar or rod, E, provided with a hook, H, and controlled by the flexible band or rope C', pin *i*, lever *n*, when operated by the handle or crank F, in com-

bination with the chain C, forming a part of the rod E, operating through loops S'' S''', loaded drum D, self-adjusting pawl P, and ratchet R, all located and operated below the bottom frame-work of the car for the double purpose, substantially in the manner as above set forth.

In testimony whereof I hereunto subscribe my name in the presence of two witnesses.
GEORGE LOWDEN.

Witnesses:

J. P. McLEAN,

J. RITCHIE McLEAN.