

E. A. WHITAKER.
Car-Starter.

No. 208,778.

Patented Oct. 8, 1878.

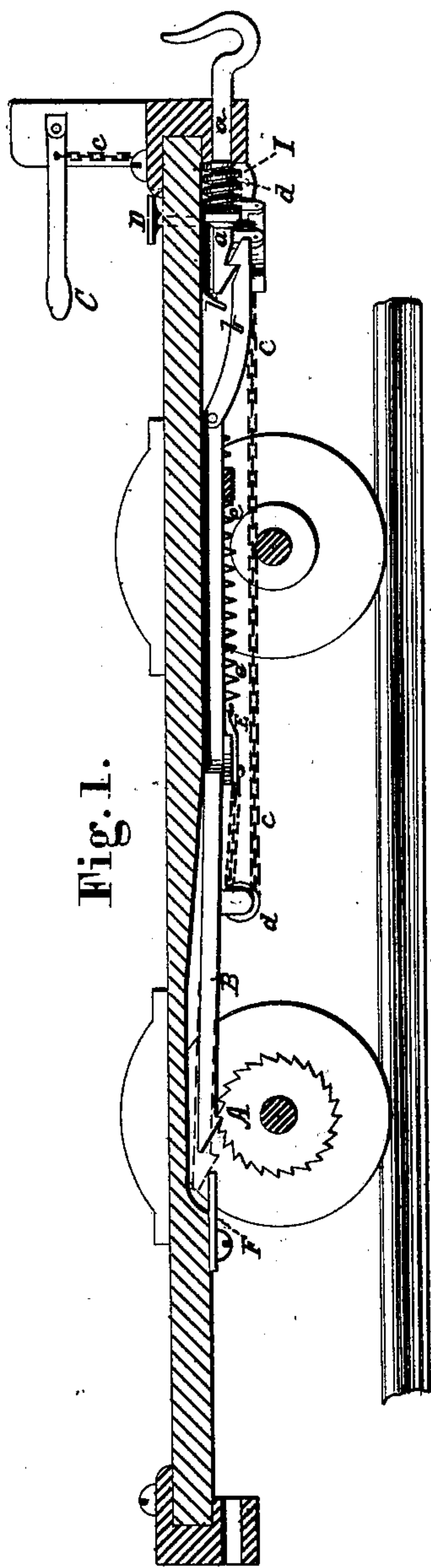
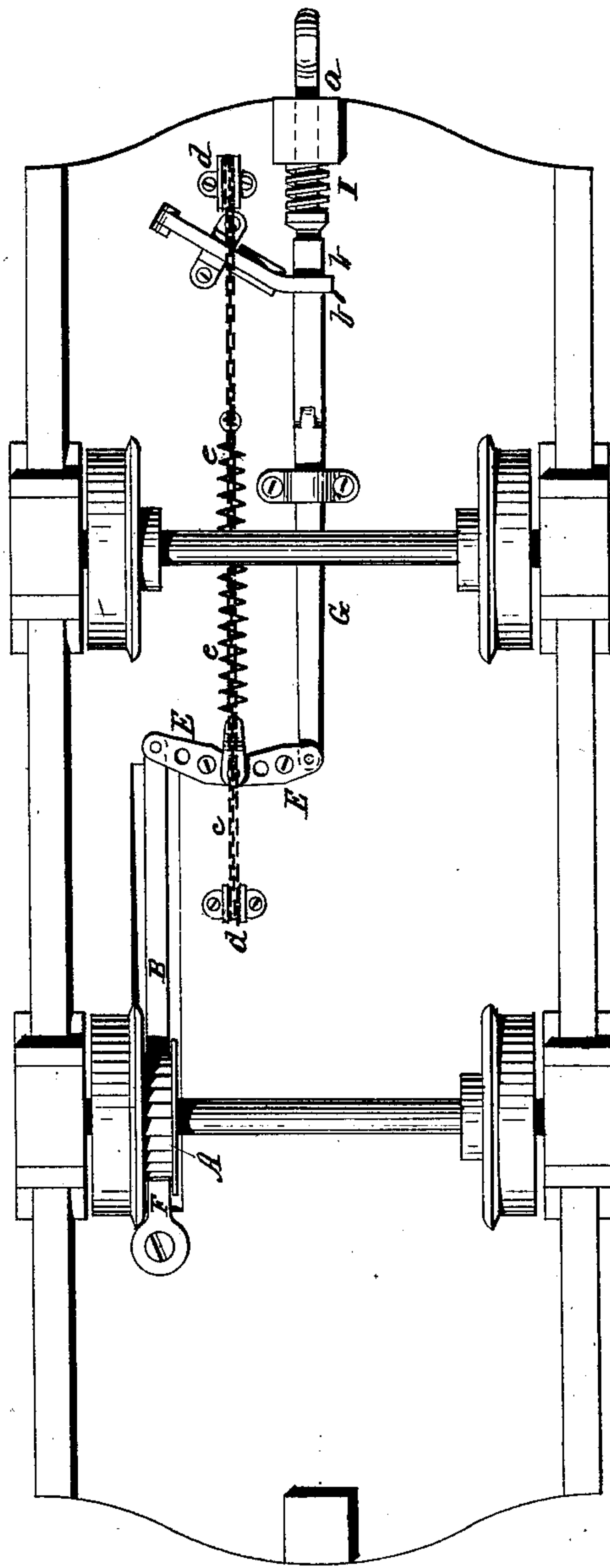


Fig. 2.



WITNESSES:

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EDGAR A. WHITAKER, OF PAWTUCKET, ASSIGNOR OF ONE-HALF HIS RIGHT
TO SARAH ATHENA BEAMAN, OF PROVIDENCE, RHODE ISLAND.

IMPROVEMENT IN CAR-STARTERS.

Specification forming part of Letters Patent No. **208,778**, dated October 8, 1878; application filed
August 31, 1878.

To all whom it may concern:

Be it known that I, EDGAR A. WHITAKER, of Pawtucket, Providence county, Rhode Island, have invented certain Improvements in Car-Starters, of which the following is a specification:

My invention relates to that class of mechanical contrivances known as "car-starters," and it may be applied to street or horse cars or railroad-cars. It is designed to be operated either by the driver or by the propelling power of the car, (animal or steam,) singly or by both combined; and it consists in providing a system of levers, rods, chains, and pulleys, connecting with a ratchet-wheel upon the axle of the car-wheel, so arranged and combined that when the car is at a stand the wheels may be moved forward a few inches, thus overcoming the inertia of the mass and facilitating a start.

Referring to the drawing filed herewith, I will describe my invention so that others skilled in the art may be able to make and use the same.

Figure 1 is a vertical section of a car-body, and Fig. 2 a plan of the under side of a car-floor, showing my improvement attached thereto.

Like letters in either drawing relate to like parts of the device.

A is a ratchet-wheel attached to the axle next the car-wheel, into which the hooked rod B engages. C is a lever to be operated by the driver, connected by a chain, *c c*, passing over pulleys *d d*, bolted to the bottom of the car, with the transverse or center piece of the toggle-joint levers E E, to which one end of the hooked rod B is made fast. F is a spring, into which the hook or pawl of the hooked rod B falls when not in use, the spiral spring *e e* thrusting the rod B back. *a a* is a rod provided with a spiral spring, I, one end of which hooks to the pole or draft-bar of the car, and the other end of which has a jaw, *b'*, to engage in the jaw *b* of the connecting-rod G, when the same is raised by the elevating-lever connected with the step D. At one end the rod G is bolted to the toggle-joint lever E. The plates of the toggle-joint lever are bolted to the bottom of the car a little past the center. The bolts do not bind the plates rigidly to the car-bed, there being slots in the plates through which the bolts pass that al-

low some play to the plates, thus giving a greater play to the hooked rod B than to the connecting-rod G.

The method of operation will be readily seen.

When the car is at a stand, the driver, wishing to start it, lifts the lever C, which, by means of the chain *c c*, pulls the hooked rod B forward, drawing its hook or pawl from the spring F into a ratchet of the wheel A, thus turning the axle.

If it is desired to use the power that draws the car, the step D is pressed down, engaging the jaw *b* of the connecting-rod G in the jaw *b'* of the rod *a a* and bringing the pawl of the rod B into play with the ratchet-wheel through the toggle-joint lever E E.

It will be seen that both methods may be combined, and that the device may be applied to both ends of a car, so as to move it in either direction.

I claim as my invention—

1. The combination, in car-starting apparatus, of the ratchet-wheel A with the hooked rod B, the toggle-joint levers E E, the spiral spring *e e*, the chain *c c* passing over the pulleys *d d* and the lever C, when united and operated as shown and described.

2. The combination, in car-starting apparatus, of the ratchet-wheel A, the hooked rod B, the toggle-joint levers E E, the connecting-rod G, the jaws *b b'*, the levers moved by the step D, the rod *a a*, and the spiral spring I, when united and operated as shown and described.

3. In car-starting apparatus, the toggle-joint lever E E, the plates of which are bolted to the bottom of a car a little past the center of the car, there being slots in these plates, through which the bolts pass, allowing some play to the plates upon the bolts, as shown, for communicating the power of the starting-lever, controlled by the driver, to the arm or rod that moves a ratchet-wheel connected with the car-wheel.

In testimony whereof I have signed my name to this specification before two subscribing witnesses.

EDGAR A. WHITAKER.

Witnesses:

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THOMAS H. LYNCH.