R. HERMANCE.

CAR-STARTER.

No. 189,458. Patented April 10, 1877.

Fig. 1

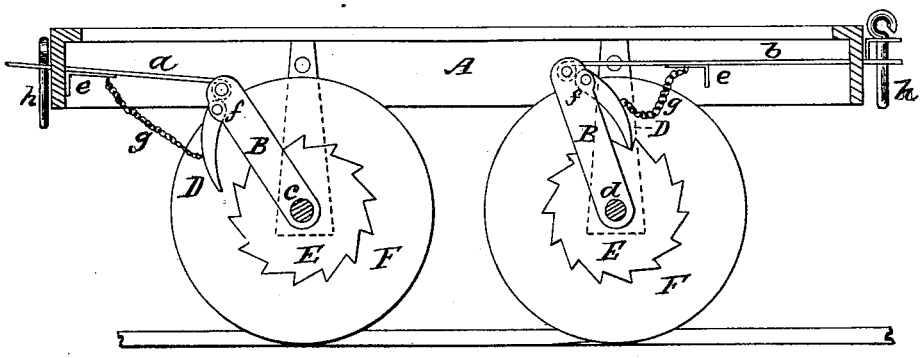
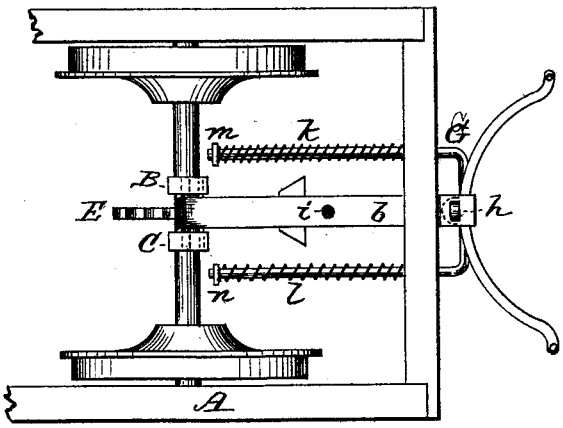


Fig. 2.



WITNESSES

Nat. E. Oliphant

John A. Grow Jr.

INVENTOR

Robert Hermance,

per Chas. H. Fowler.

Attorney.

UNITED STATES PATENT OFFICE.

ROBERT HERMANCE, OF FORT MILLER, NEW YORK.

IMPROVEMENT IN CAR-STARTERS.

Specification forming part of Letters Patent No. **189,458**, dated April 10, 1877; application filed March 9, 1877.

To all whom it may concern:

Be it known that I, ROBERT HERMANCE, of Fort Miller, in the county of Washington and State of New York, have invented a new and valuable Improvement in Street-Car Starters; 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 annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a longitudinal vertical section of my invention Fig. 2 is a top-plan view of my invention, showing it applied to a car in which a tongue or pole is dispensed with.

This invention has relation to that class of devices known as "car-starters;" and the object of the present invention is to construct a car-starter that will be simple and durable, and in which the several operating parts are not likely to become easily injured or broken from use.

My invention therefore consists in the combination and arrangement of the several operating parts, as will be hereinafter more fully described, and subsequently pointed out in the claims.

In the accompanying drawings, A represents the truck or platform of a car, which may be of the ordinary construction. Through the ends of this truck pass suitable draft-bars *a b*, connected with levers B C, the same being secured upon axles *c d*, said draft-bars being provided with stops or shoulders *e* to regulate their forward motion. Secured between the vertical levers B C, by means of a pivotal pin, *f*, is a pawl or dog, D, engaging with a ratchet-wheel, E, arranged upon either or both axles. The lower end of the pawl or dog is connected to the draft-bar by means of a chain or cord, *g*, for the purpose hereinafter mentioned.

It will be observed that to operate my improved car-starter, a tongue or pole is coupled with the draft-bar by means of a coupling-pin, *h*, and the horses backed a step or so, when the pawl D will drop and engage with the ratchet-wheel E. The horses, upon being started, will draw the draft-bar forward, thereby carrying the levers with the pawl forward, thus causing the pawl to engage with the ratchets, and thereby obtain a partial revolution of the ratchet-wheel, axle, and the usual car-wheels F, thus relieving the horses from all strain in starting the car.

After this partial revolution of the wheels, the pawl leaves the ratchet, and the stop or shoulder upon the draft-bar comes against the end of the truck, and the horses proceed as usual until the car is brought to a stop; and this operation is repeated, and so on, until the end of the route is reached, when the driver draws the coupling-pin from the hole *i* of the draft-bar, which comes just in front of the end of the car, as shown at *j*. This adjustment prevents the draft-bar from slipping back, and letting the pawl apply itself to the ratchet.

The chain or cord *g* prevents all possibility of the dog D falling upon the teeth, and engaging with the ratchet-wheel E, when the draft-bar is drawn out and the car started.

It will be seen that the above description applies only to those cars in which is used a tongue or pole; and I will now proceed to describe my invention as applied to cars without a tongue or pole, and using a whiffletree, as shown in Fig. 2 of the drawing.

The arrangement is essentially the same, except that I use a U-shaped iron, G, which passes through the front end of the truck, and has upon its free ends spiral or other suitable springs *k l*, held in place by means of stops *m n*. The driver pushes the draft-bar back, so that the dog or pawl is applied to the ratchet-wheel, and couples the whiffletree to the draft-bar just back of the outer portion of the U-shaped iron. The horse or horses being started, the power is applied the same as with a tongue or pole, the draft-bar being drawn out to the stop or shoulder, and proceeds as usual. When the car is stopped the springs draw the draft-bar and whiffletree back, and the weight of the dog or pawl causes it to engage with the ratchet, and it is again applied, ready for a start.

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

1. The levers B C and ratchet-wheels E,

rigidly secured to the axles of a car, in combination with the pawls D and chains or cords *g*, connected thereto and to the draft-bars *a b*, the same being provided with stops *e*, holes *i*, and the pins *h*, the whole arranged to operate substantially as and for the purpose set forth.

2. The combination, with the levers B C, ratchet-wheels E, pawls D, chains or cords *g*, and the draft-bars *a b*, with stops *e*, holes *i*, and pins *h*, of the U-shaped iron G and springs *k l*, substantially as and for the purpose specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

ROBERT HERMANCE.

Witnesses:

CHARLES H. MILLER,

CALEB B. TEFFT.