R. HERMANCE.

Car-Starter.

No. 210,852. Patented Dec. 17, 1878.

Fig. 1

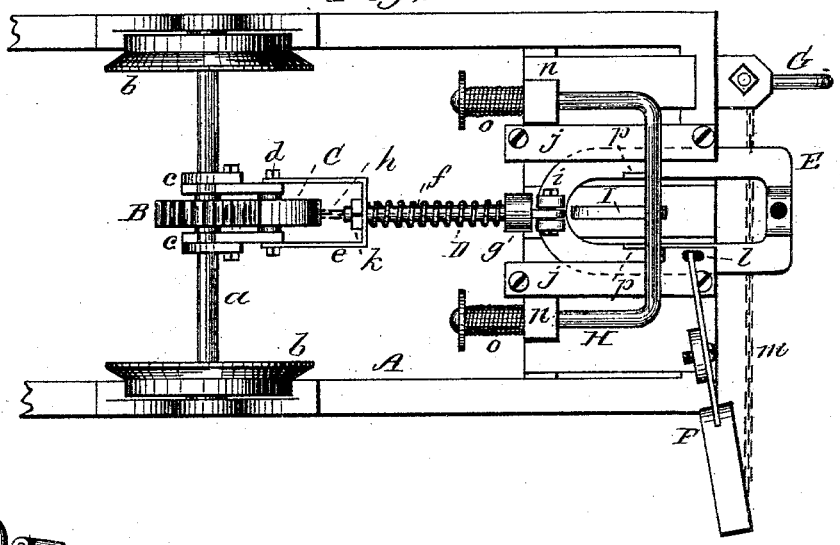


Fig. 2.

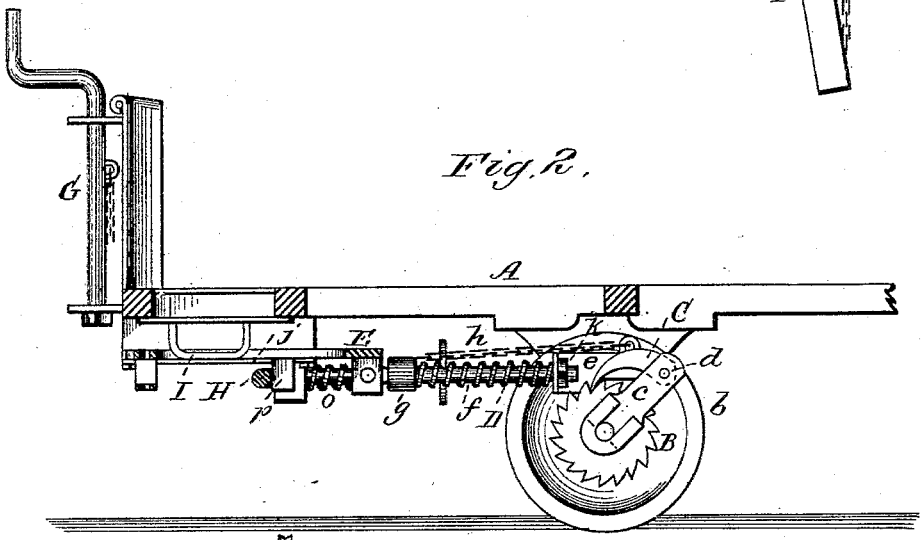
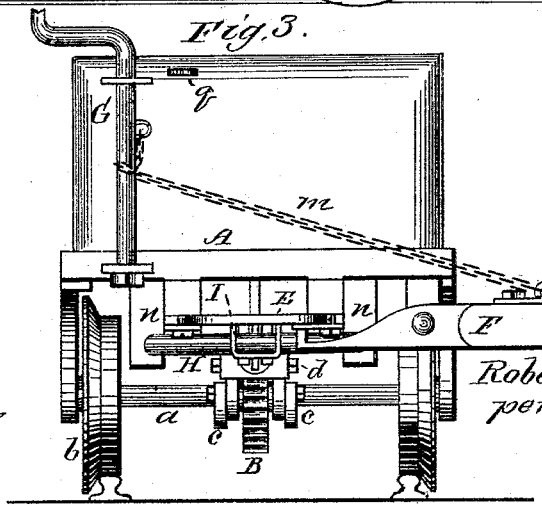


Fig. 3.



WITNESSES

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UNITED STATES PATENT OFFICE.

ROBERT HERMANCE, OF FORT MILLER, NEW YORK.

IMPROVEMENT IN CAR-STARTERS.

Specification forming part of Letters Patent No. **210,852**, dated December 17, 1878; application filed October 12, 1878.

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 bottom-plan view of my invention. Fig. 2 is a longitudinal vertical section, and Fig. 3 is an end view.

This invention has relation to street-car starters, and is designed as an improvement upon my patent bearing date the 10th day of April, 1877, and numbered 189,458; and it has for its object to construct a device that will relieve the team from all strain in starting the car, and makes it comparatively easy for the team, as by my invention the car can be started very steadily without a jerk; also, greatly lessening the labor of the driver, as he necessarily has to apply the brake to stop the car, and by so doing by my invention the starter is applied ready to assist the team in starting, as will be hereinafter described, and subsequently pointed out in the claims.

In the accompanying drawings, A represents the ordinary car truck or platform, provided with the usual axles *a* and wheels *b*. To the axle *a* is keyed, or otherwise rigidly secured, a ratchet-wheel, B, and upon each side of said ratchet-wheel and to the axle are loosely fitted levers *c*, to the upper ends of which is secured, by bolt *d*, a pawl, C. The same bolt which secures the pawl to the levers *c* also connects to said levers a U-shaped plate, *e*, to which is swiveled a rod, *f*. A sleeve, *g*, is loosely fitted upon one end of the rod *f*, and connects with the pawl C by a chain, cord, or strap, *h*; and around the rod is placed a suitable spring, D, one end of which bears against the plate *e*, and the opposite end against the sleeve *g*.

By this construction, when the draft-bar is pushed clear back to start the car, the pawl will engage with the top part of the ratchet, and when so engaged and the team is drawing the draft-bar out the spring D is compressed by means of the sliding collar or sleeve *g* and chain or cord *h*, thereby enabling the pawl to retain its hold upon the ratchet-wheel until the draft-bar is drawn entirely out, and quickly taking up the same when disengaged, thereby preventing all possibility of the pawl being again engaged until the draft-bar is forced clear back, and also preventing the rattling of the pawl upon the ratchet-wheel.

One end of the rod *f* is connected by a bolt, *i*, to a sliding plate, E, arranged upon the under side or bottom of the car truck or platform A, which serves as the draft-bar. This plate E is guided in its movement by ways *j*, arranged upon each side of the plate. The employment of this plate and its location below the bottom of the car-truck will allow the pin or hook to which the team is attached to pass under the truck or platform, whereby a portion of the slip motion is taken up under the car, and when the draft-bar is drawn out and the car started the team would be drawing as close to the car as desired.

The extent of the length of sliding motion of the plate E can be regulated by shortening the distance between said plate and the U-shaped plate *e* by screwing up the nut *k* upon the end of the rod so that when the plate E is drawn out it will only project a sufficient distance in front of the car to enable the driver to pull the draft-pin or release his team. It will be noticed that the peculiar construction of the plate E—or, in other words, it being the same as a double plate, and firmly held in its bearings by the ways *j*—prevents all possibility of its being warped or twisted by a side draft of the team.

To prevent the draft-bar having a sliding motion varying back and forth with the uneven draft of the team, a dog, F, is pivoted to the front end of the car, and is weighted at its outer end, in order that its own weight will retain the hooked end thereof within a hole, *l*, in one of the ways *j*. A chain or cord, *m*, is connected to the weighted end of the dog F, the other end being secured to the brake-rod G.

When the car is started and the draft bar or plate E is drawn out, an opening in said plate will register with the hole *l* in the way *j*, thereby permitting the hooked end of the

dog F to automatically engage with the opening in the plate E, thereby holding the plate stationary, and preventing it from sliding back until the driver applies the brake to stop the car, when the weighted end of the dog is elevated, releasing the hooked end of the dog from the hole *l* in the way *j* and the opening in the plate E, leaving the plate free to be instantly taken back by the U-shaped iron or rod H, placed under the car-truck in bearings *n*, and operated by springs *o*, said rod H forcing the plate E back by bearing against lugs *p*, secured upon the under side thereof.

A stationary loop or stop, I, is secured to the under side of the car-truck, located within the opening in the plate E, to limit the backward and forward motion of said plate, and so that when the car is started and the draft bar or plate E is drawn out a sufficient distance, the rear end of the loop or stop will also serve as a firm structure for the team to draw against.

A loop or eye, *q*, is secured to the front of the car, near the brake-rod, for the purpose of holding the end of the chain *m* when disconnected from the brake-rod.

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

1. The combination of the ratchet-wheel B, levers *c*, bolt *d*, pawl C, rod *f*, sleeve *g*, chain or strap *h*, spring D, and U-shaped plate *e* with the axle *a*, substantially as and for the purpose specified.

2. The sliding plate E, ways *j*, and lugs *p*, in combination with stop I, rod H, springs *o*, and rod *f*, substantially as and for the purpose set forth.

3. The weighted dog F, in combination with the sliding plate E and ways *j*, provided with holes or openings for the hooked end of the dog F to engage, substantially as and for the purpose described.

4. The combination, with the weighted dog F, chain *m*, and brake-rod G, of the sliding plate E, formed with lugs *p*, stop I, and rod H, and the springs *o*, substantially as and for the purpose set forth.

5. The combination of the weighted dog F, chain *m*, brake-rod G, ways *j*, sliding plate E, formed with lugs *p*, stop I, rod H, spring *o*, draft-rod *f*, sleeve *g*, chain or strap *h*, spring D, U-shaped plate *e*, bolt *d*, pawl C, levers *c*, and ratchet-wheel B with axle *a*, substantially as and for the purpose set forth.

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

ROBERT HERMANCE.

Witnesses:
D. DEAN,
SAML. SHELDON.