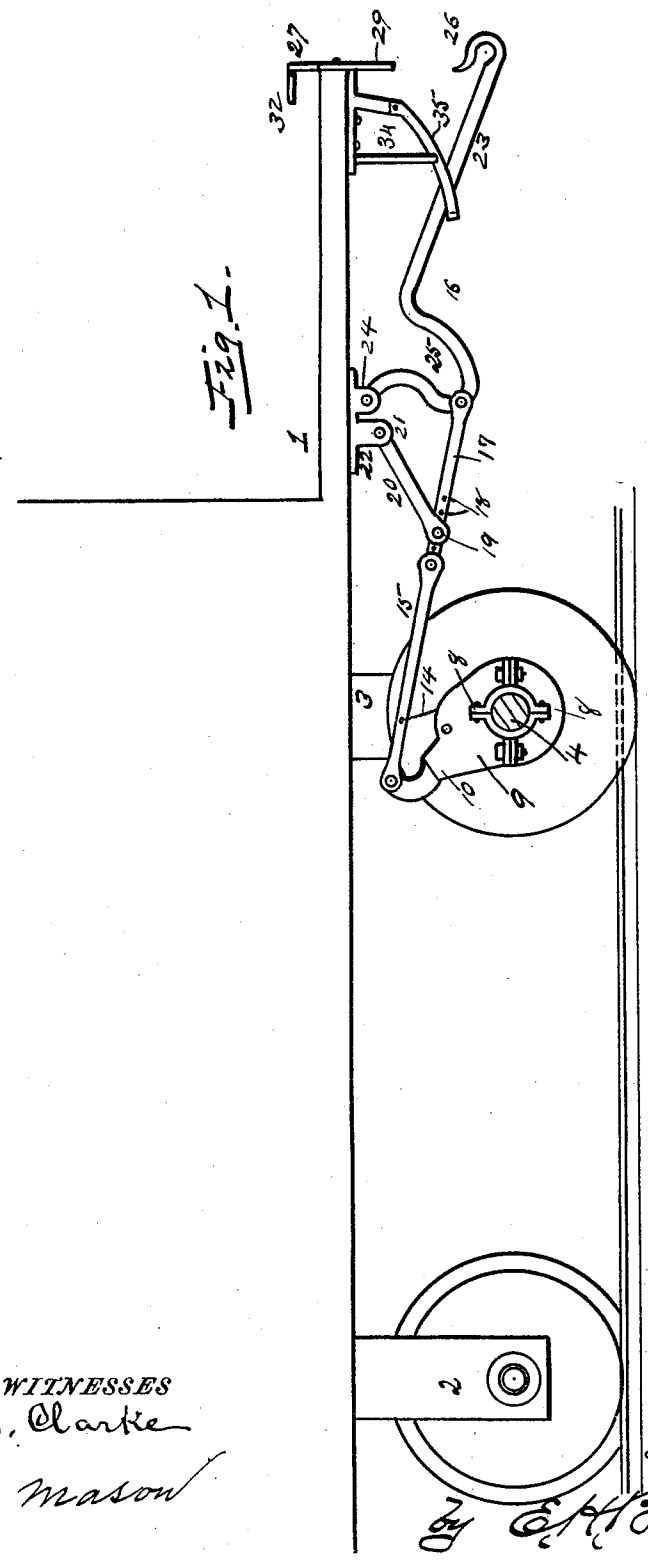
(No Model.) 2 Sheets—Sheet 1.

G. B. WARNER & L. J. ALLEN.

CAR STARTER.

No. 479,127. Patented July 19, 1892.

Fig. 1.



WITNESSES
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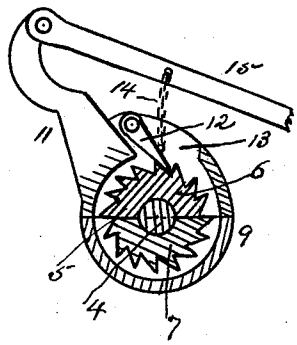


Fig. 2.

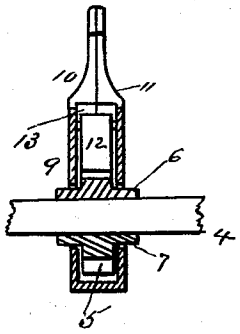
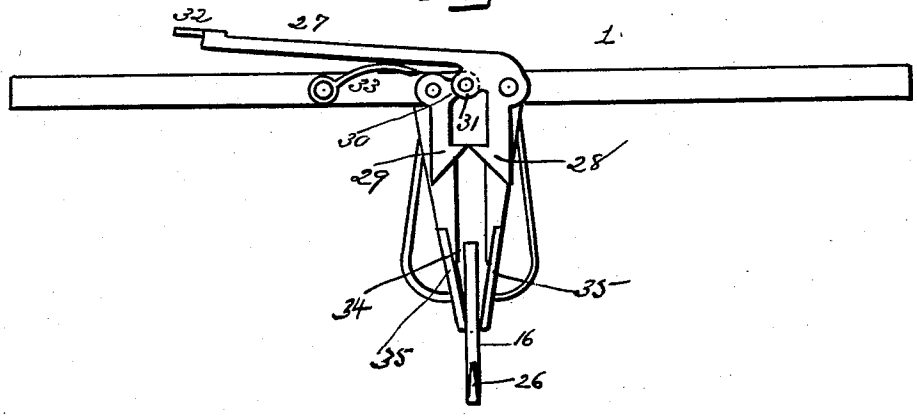


Fig. 4.

Fig. 3.



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UNITED STATES PATENT OFFICE.

GEORGE B. WARNER AND LEWELLYN J. ALLEN, OF WOODBURY, CONNECTICUT.

CAR-STARTER.

SPECIFICATION forming part of Letters Patent No. 479,127, dated July 19, 1892.

Application filed April 4, 1892. Serial No. 427,687. (No model.)

To all whom it may concern:

Be it known that we, GEORGE B. WARNER and LEWELLYN J. ALLEN, citizens of the United States, residing at Woodbury, in the county of Litchfield and State of Connecticut, have invented certain new and useful Improvements in Car-Starters; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to car-starters; and it consists in the construction and novel combination of parts, as hereinafter fully described and claimed.

The object of our invention is to provide an effective, simple, and durable device for starting street-railroad cars and thereby relieve the heavy strain upon the horses in starting the cars at the frequent stoppings to receive and discharge the passengers on the lines of street-car traffic. Many constructions have been devised in which ratchet-wheels and pawls have been employed under different arrangements and operated to turn the car-wheels by the draft of the horse or horses; but our special construction differs from any of these, as will hereinafter appear.

In the drawings, Figure 1 is a side elevation of a portion of a street-car, one of the front pedestals and its front wheel being removed to show in full lines the car-starter. Fig. 2 is a vertical longitudinal sectional view taken through the casing which incloses the ratchet-wheel and detent to show the relative positions of these parts. Fig. 3 is a front view of the car-truck, showing the guard for the draw-bar, the releasing-lever, and the holding and releasing hooks that hold and release the draw-bar. Fig. 4 is a transverse sectional view of the casing.

Referring by numerals to the accompanying drawings, 1 designates the floor of the car-body, and 2 and 3 the pedestals, in which the bearings for the journals of the axles are formed, all of which are of the ordinary or well-known construction practiced in street-car building.

4 is the front axle, which is made integral with the wheels and revolves therewith, as does also the near axle, which, however, requires no specific description herein, as the car-starting mechanism is in this instance applied to the front axle only so far as the mechanism of the car-starter itself is concerned.

5 is a ratchet-wheel, which is made in two semi-diskal parts 6 and 7, so that it may be placed upon the axle and afterward secured in place by bolts and nuts, the bolts being first passed through abutting lugs 8, having alinged bolt-holes for the reception of the bolts and the securing-nuts, being thereafter turned to place to secure the semi-disks together to form the completed ratchet-wheel. This ratchet-wheel is incased in a two-part box or casing 9, which is also provided with lugs for the reception of securing-bolts to secure it in place, it being necessary to make or construct it in two parts in order to get it to place around the ratchet, it being the object to apply this starter to old as well as to new car structures for the purposes hereinbefore specified.

The two-part ratchet-wheel above referred to is provided with outwardly-projecting half-sleeves 10 and 11, which when brought together upon the axle of the car form split sleeves, which are securely riveted or bolted to place to prevent the ratchet-wheel from turning on the axle. A detent 12 is pivoted within the opening 13 in the inclosing case and is connected by a chain 14 with the rear section 15 of the sectional draw-bar 16. The middle section 17 of the sectional draw-bar has its rear portion perforated laterally at intervals, as at 18, to receive the pin or rivet 19, by which the bifurcated lower end of the swinging lever 20 is adjustably connected therewith. The upper end of the swinging lever 20 is hinged in a depending arm 21 of a bearing 22. The front section 23 of the draw-bar 16 has its rear end hinged in an arm 24 of the depending support on the under face of the floor of the car, and the rear end of the draw-bar 16 is hinged in this arm 24. A downward curve 25 in front of the fulcral or hinged point forms the point of connection between the bifurcated front end of the middle section 17 of the draw-bar. The front end

of the draw-bar 16 is provided with a hook 26, to which the singletree or doubletree is attached, as the case may be.

A lever 27 is fulcrumed to the front edge of the platform of the car and is provided at its lower or weight end with a hook or jaw 28, preferably made integral therewith. A second companion jaw or hook 29 is also fulcrumed to the front edge of the car in close proximity to the hook 28 and is pivotally connected through a short arm 30 to the lug or eye 31 on the lever 27, so that when one is operated both will work in unison. The lever 27 is provided at its power end with an integral pedal-plate 32 and a torsion-spring 33, seated in the front edge of the floor of the car, bears normally upward against said lever and holds it upward in readiness to be depressed by the foot of the car-driver when it is necessary to operate the car-starter to assist the horses in starting the same.

From the foregoing description, when taken in connection with the annexed drawings, it is believed that any person skilled in the art to which the invention appertains will be enabled to understand and construct the same.

34 represents a guard-plate consisting of depending arms 35 35, between which the draft-bar 23 has its movement and which serves to stop the bar 23 in its proper position when the car is not moving and also to guide said bar when the same is being raised by the draft to a horizontal position.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The combination, with a car truck or body having its front axle provided with a ratchet-wheel, which is fixed thereto, an incasement surrounding said ratchet-wheel and provided with projecting lugs, and an opening above said lugs, of an arm connected with the ratchet-wheel, fulcrumed in the casing and projecting outwardly therefrom, of a sectional adjustable draw-bar connected with the arm of the ratchet-wheel, suspended in bearings depending from the floor of the car, and a spring-actuated foot-lever provided with depending hooks for holding and releasing the draw-bar, substantially as and for the purposes set forth.

2. In a car-starter, the combination, with a supporting-axle of the same, of a sectional ratchet-wheel, a sectional inclosing case provided with an opening in its front, and a detent pivoted in said opening, of a sectional draw-bar supported in bearings beneath the car-body or car-floor and provided at its forward end with a draw-hook, and a spring-actuated foot-lever provided with connected holding and releasing hooks for engaging and disengaging the front section of the sectional draw-bar, substantially as specified.

3. The combination, with a car-body or car-truck provided with an incased ratchet-wheel and an arm projecting from an opening in the incasement, of a sectional draw-bar supported in bearings depending from the bottom of the car-body, a depending regulating-guard near the front end of the sectional draw-bar, and a foot-lever provided with an integral and a connected holding and releasing hook, substantially as specified.

In testimony whereof we affix our signatures in presence of two witnesses.

GEORGE B. WARNER.
LEWELLYN J. ALLEN.

Witnesses:
ROBERT I. DRAKELY,
ARTHUR D. WARNER.