

J. H. QUACKENBUSH.

Car-Starters.

No. 150,610.

Patented May 5, 1874.

Fig. 1.

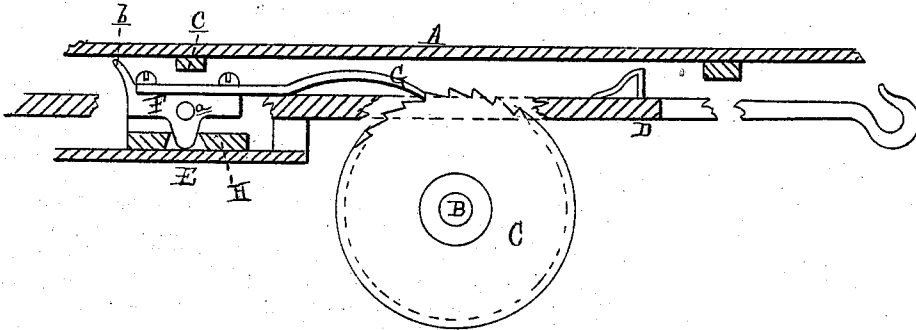
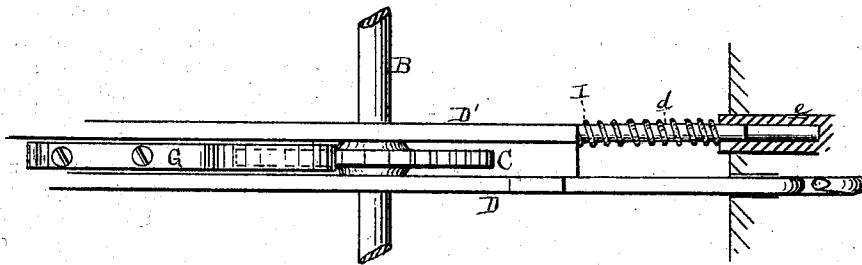


Fig. 2.



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JESSE H. QUACKENBUSH, OF EAST SAGINAW, MICHIGAN, ASSIGNOR TO
HIMSELF AND JULIUS K. ROSE, OF SAME PLACE.

IMPROVEMENT IN CAR-STARTERS.

Specification forming part of Letters Patent No. **150,610**, dated May 5, 1874; application filed
March 13, 1874.

To all whom it may concern:

Be it known that I, JESSE H. QUACKENBUSH, of East Saginaw, in the county of Saginaw and State of Michigan, have invented an Improvement in Car-Starters, of which the following is a specification:

The nature of this invention relates to an improvement in that class of car-starters wherein a ratchet is secured to the wheel-axle, and is actuated by a pawl through the sliding movement of the draw-bar in a forward direction. The invention consists in the peculiar combination of the balanced pawl with a slotted or yoke-shaped draw-bar, and a device for throwing the pawl into engagement with the ratchet on the axle in the forward movement of the draw-bar, and for withdrawing the pawl when the draw-bar is retracted by the draw-spring; also, in the peculiar arrangement of the draw-spring with relation to the said draw-bar, as more fully hereinafter set forth.

Figure 1 is a partial longitudinal vertical section of the platform of a horse-car, showing my car-starter in position. Fig. 2 is a sectional plan of the same.

In the drawing, A represents the bed of a horse-car, and B one of the axles, to which is keyed a ratchet, C, made in two parts, and bolted together around the axle. D is a draw-bar, having a plate, D', bolted to one side under the car, the ratchet coming between the bar and plate. The ends of the draw-bar pass through a stirrup under the platform at each end of the car. Between the axles a box, E, is bolted under the car-bed, through which box the draw-bar and its plate D play longitudinally. F is a T-shaped tappet, pivoted at *a* between the bar and plate, and to its top is bolted a pawl, G. The lower end of the tappet is inserted in a socket in a cast-iron block, H, which slides on the bottom of

the box E. When the draw-bar is pulled forward this block is dragged forward by the tappet. The resistance offered to the latter causes it to tilt and throw the pawl into engagement with the ratchet-teeth of the wheel C to rotate the axle B, and thus start the car forward with a leverage due or equal to half the diameter of the said ratchet. Just before the draw-bar is pulled forward to its full limit of play, a projection, *b*, at the back end of the tappet, is arrested by a block, *c*, under the car, throwing up the front end of the pawl, as the car is then in motion. When the draw-bar is retracted by its spring the drag or resistance of the block H throws up the pawl and tilts the tappet, which remains in that position until the draw-bar is again pulled upon.

The draw-springs, instead of being placed between the axles, as has been the practice heretofore, I arrange in the following manner: A rounded prolongation of the plate D' forms a stem, *d*, upon which a spring, I, is spirally coiled between the shoulder of said stem and a block, *e*, under the platform, having a socket in which said stem plays. This arrangement places the springs out of the way of the starting devices.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The tappet F, pivoted between the draw-bar D and plate D', its lower arm engaged with the block H to slide in the box E, and the pawl G, in combination with the ratchet C, substantially as described.

2. The draw-spring I on the stem *d*, between the draw-bar plate D' and the block *e*, all combined substantially as described.

JESSE H. QUACKENBUSH.

Witnesses:

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CHAS. J. HUNT.