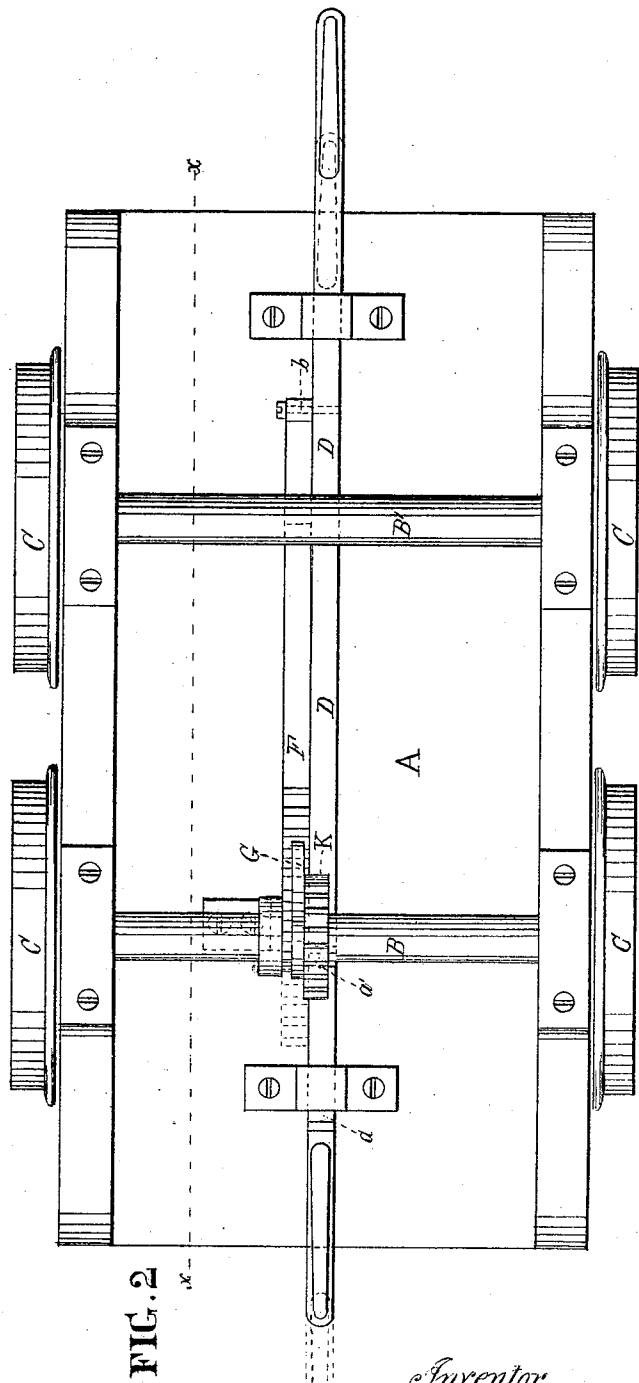
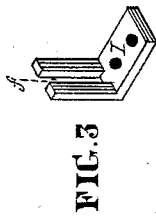
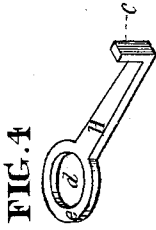
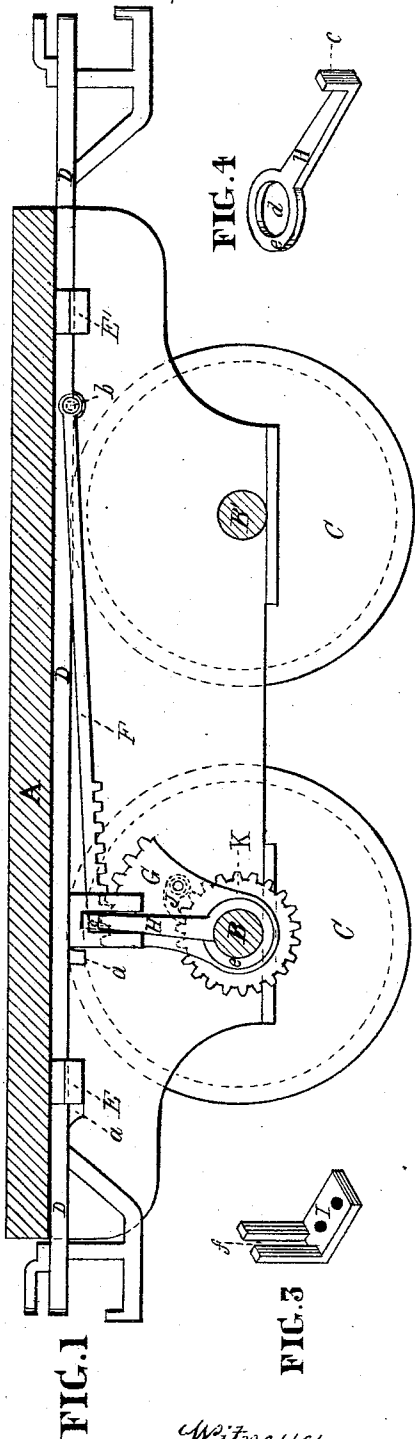


C. MEINERS.
Car-Starters.

No. 149,323.

Patented April 7, 1874.



Witnesses.
Thomas P. Dewley.
Joseph S. Chahoon

Inventor.
Cornelius Meiners.
By His Attorney,
Stephen Ustick.

UNITED STATES PATENT OFFICE.

CORNELIUS MEINERS, OF INDIANAPOLIS, INDIANA.

IMPROVEMENT IN CAR-STARTERS.

Specification forming part of Letters Patent No. **149,323**, dated April 7, 1874; application filed January 23, 1874.

To all whom it may concern:

Be it known that I, CORNELIUS MEINERS, of Indianapolis, in the county of Marion and State of Indiana, have invented certain Improvements in Railroad-Car Starters, of which the following is a specification:

My invention relates to the combination of a pivoted rack with a sliding draw-bar, and a toothed sector which turns freely at its lower end on one of the axles, the sector being provided with a pawl which engages with a ratchet, or toothed wheel on the axle, so that, when the horses start forward, a leverage is obtained to assist in starting the car. The rack is kept in connection with the sector by means of a hook which passes over it from the upper end of a vertical rod, which has an enlargement at its lower end provided with an opening in which the axle turns freely. The upper end of the bar is held in its vertical position by means of a slotted elbow, which is fastened to the under side of the bottom of the car, the slot being of sufficient length to admit of the vertical movements of the car.

Figure 1 is a longitudinal vertical section of the bottom of a car-body, and parts beneath it at *x x*. Fig. 2 is a reverse plan view of the same. Fig. 3 is an isometrical view of the elbow I. Fig. 4 is a like view of the rod H.

Like letters of reference in all the figures indicate the same parts.

A is the bottom of a car-body; B and B', the axles, provided with wheels C. D is a draw-bar, which has a sliding longitudinal movement in the guides E and E' at its ends, the extent of the movements being regulated by the stops *a* and *a'* at one end coming against the guide E. F is a toothed rack, which is hung at one end on the fulcrum-pin *b* that projects from one side of the draw-bar D. The other end engages with the toothed sector G, in the lower end of which the axle B turns freely. The rack F is prevented rising out of its connection with the sector G by means of the hook *c* on the upper end of the vertical rod H, shown in detail in Fig. 4.

The lower end of the rod is held in position by the axle B, which turns freely in the eye *d* in the enlargement *e*. The upper end of the rod plays in the slot *f* of the elbow I, fastened to the lower side of the bottom A of the car, the slot being sufficiently long to admit of the up-and-down movement of the car-body.

The operation is as follows: When the horses stop, the draw-bar is brought back into the position represented by full lines by the breast-chains, when a pole is used, until the stop *a* bears against the guide E. When a pole is not used, a spring may serve the purpose of drawing it back; and when the horses are started, they pull the draw-bar forward until the stop *a'* bears against the opposite side of the guide, as represented by dotted lines in Fig. 2. During this time the pawl J being connected with toothed wheel K, the wheels C C on the shaft B are turned partly around, the leverage obtained by the connection of the draw-bar with the axle, as above described, facilitating the starting of the car.

When cars are intended to run either end foremost, a pawl should be on each side of the axle. The friction and noise which would be caused by the teeth of the wheel striking the pawl J, when the latter lies loosely upon the wheel in its revolutions, may be prevented by means of a slight spring, so arranged in any convenient manner as to relieve the wheel of the weight of the pawl.

I claim as my invention—

1. The combination of the sliding draw-bar D provided with a jointed toothed rack, F, with the toothed sector G, pawl J, and axle B, substantially in the manner and for the purpose above described.

2. The vertical rod H having an elbow, *e*, in combination with the axle B and slotted elbow I, substantially as and for the purpose set forth.

CORNELIUS MEINERS.

Witnesses:

THOMAS J. BEWLEY,
STEPHEN USTICK.