



# UNITED STATES PATENT OFFICE.

WILLIAM H. LYNN, OF FREEPORT, ILLINOIS.

## IMPROVEMENT IN CAR-STARTERS.

Specification forming part of Letters Patent No. **206,465**, dated July 30, 1878; application filed March 8, 1878.

*To all whom it may concern:*

Be it known that I, WILLIAM H. LYNN, of Freeport, in the county of Stephenson and State of Illinois, have invented a new and Improved Car-Starter, of which the following is a specification:

Figure 1 is a plan view of my improved car-starter. Fig. 2 is a longitudinal section taken on line *x x* in Fig. 1.

Similar letters of reference indicate corresponding parts.

The object of my invention is to provide a simple and effective starter for street and other cars drawn by animals; and it consists in a sector-lever pivoted in supports attached to the car-frame, and connected by a chain with the draw-bar. The said sector-lever is provided with a pawl, which engages a ratchet-wheel on the car-axle, and is provided with two springs, which throw it into and out of engagement with the ratchet-wheel.

Referring to the drawing, A is a car-frame, supported on axles B B', upon which are placed the wheels C. Upon the axle B a ratchet-wheel, D, is secured, and near the ratchet-wheel a sector-lever, E, is supported by a short shaft, *a*, which is journaled in hangers *b* attached to the car-frame. The sector-lever E is grooved in its periphery to receive a chain, *c*, which is connected with the draw-bar F.

A pawl, G, which consists of two side pieces, *d*, connected by the block *e* and V-shaped bar *f*, is pivoted to the side of the sector-lever, about one-third of the distance between the axis and periphery of the lever, so that the V-shaped bar of the pawl may engage the teeth of the ratchet-wheel D.

A spring, *g*, having two arms, *h i*, is attached to the back of the pawl G and engages an arm, *j*, that projects downward from the car-frame.

The draw-bar F is provided with a stop-pin, *k*, that limits both the outward and backward movement of the bar by striking the cross-bars *l m* of the car-frame. A pawl, *n*, is pivoted between ears *o*, that project from the car-platform, and is thrown into engagement with the stop-pin *k* by a spring, *p*, placed under the longer arm of the pawl.

The lower portion of the sector-lever E is weighted, to insure its return to its normal position after the starter has been operated.

The horses hitched to the draw-bar F start the car by moving the sector-lever so as to cause the pawl G to drop into the notches of the ratchet-wheel D. The farther forward movement of the sector-lever results in moving the ratchet-wheel and starting the car.

When the draw-bar F is drawn out so that the stop-pin *k* strikes the cross-piece *l* of the car-frame, the pawl *n* engages the said pin and prevents the return of the bar; and the spring-arm *i*, by striking the under side of the arm *j*, lifts the pawl from the ratchet-wheel. When the car is stopped the pawl is disengaged, and the weight of the sector-lever draws the draw-bar back, and the arm *h* of the spring *g* strikes the arm *j* and forces the pawl G into engagement with the ratchet-wheel.

The starting device at the opposite end of the car is precisely like the one just described, with the exception of the draw-bar, and the parts, with this exception, will therefore be designated by the same letters of reference.

The draw-bar F is placed in guides in the end of the car, and is slotted longitudinally to receive the shaft *a'*, which is journaled in the car-frame, and is provided with the drum *b'* at its lower end and a hand-wheel, *c'*, at its upper end, and a ratchet-wheel, *d'*, is secured to it above the car-platform. A pawl, *e'*, is pivoted to the platform and thrown into engagement with the ratchet by a spring, *f'*. A chain, *g'*, is attached to the drum *b'* and to the outer end of the draw-bar F'.

This device is employed in drawing back and retaining the draw-bar after the starter has been operated, and when the starter is to be operated the pawl *e'* is thrown out of the ratchet-wheel *d'* by the pressure of the foot against the long arm of the pawl. The draw-bar may then be drawn out sufficiently to operate the starting mechanism.

I do not limit or confine myself to the exact form or arrangement of the parts herein described, as they may be varied without departing from my invention.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A car-starter lever, E, pivoted to the car-frame, provided with a pawl, and flexibly connected with the draw-bar, in combination with two springs and a ratchet-wheel, arranged as shown and described.

2. The combination, with the pawl G, of the spring *g*, having arms *h i*, and the arm *j*, secured to the car-frame, substantially as shown and described.

WILLIAM HENRY LYNN.

Witnesses:

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