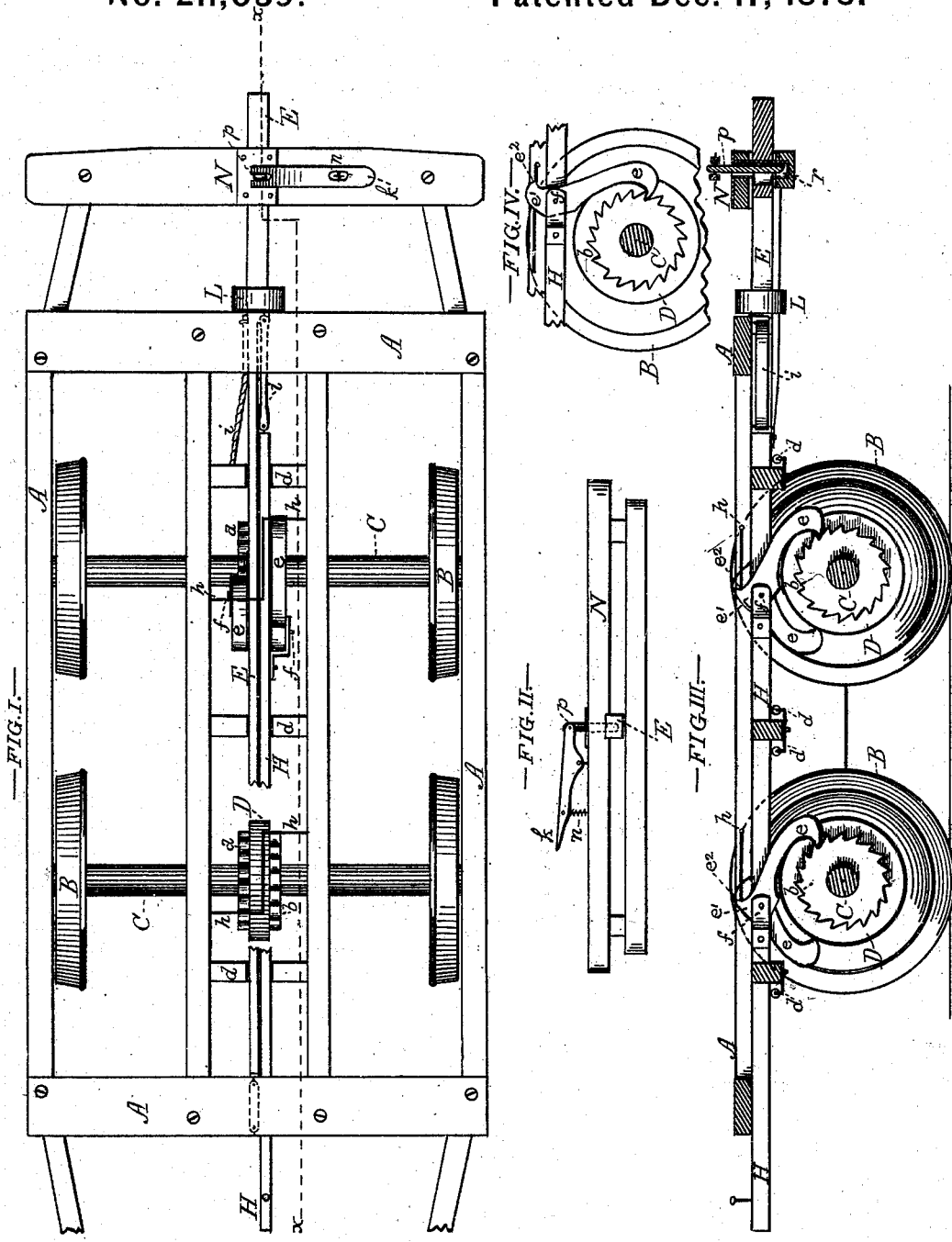


C. H. NYE.
Car-Starter.

No. 211,039.

Patented Dec. 17, 1878.



Witnesses:
Chas. E. Lewis
A. C. Egan

Inventor:
Chas H. Nye
By his Att'y
Chas B. Mann

UNITED STATES PATENT OFFICE.

CHARLES H. NYE, OF BALTIMORE, MARYLAND, ASSIGNOR OF ONE-HALF HIS RIGHT TO CHARLES H. STEVENSON, OF SAME PLACE.

IMPROVEMENT IN CAR-STARTERS.

Specification forming part of Letters Patent No. **211,039**, dated December 17, 1878; application filed May 16, 1878.

To all whom it may concern:

Be it known that I, CHARLES H. NYE, of Baltimore, in the county of Baltimore and State of Maryland, have invented a new and useful Improvement in Car-Starters, of which the following is a specification:

My present invention relates to a car-starter for use on street-cars drawn by horses, the object being to simplify and improve the construction of these devices.

The invention consists in the combination, with a double ratchet-wheel, the two sides of which are arranged to be drawn in opposite directions, of two draw-bars, to each of which are attached a rubber spring and a swinging draw-hook having a head of peculiar construction, and arranged in such manner that the head will come in contact with transverse rods, thereby disengaging the hooks from the ratchets; and further consists in providing one end of each draw-bar having a rubber spring attached with a rubber cushion adapted to lessen the concussion when the bar is drawn out; and further consists in providing the draw-bars with an elongated hole, in combination with a pin attached to a foot-lever, whereby some degree of elasticity is at all times afforded in the draft, thus relieving the horses of strain, all as hereinafter described.

My invention will first be described in connection with the accompanying drawings, and then pointed out in claims.

Figure 1 is a plan view of the running parts of a street-car embodying my invention, a portion of the draw-bars over one axle being broken away. Fig. 2 is an end view of car-frame. Fig. 3 is a vertical longitudinal section through $x x$, Fig. 1. Fig. 4 is a view of draw wheel and hook, showing the position when beginning to draw.

The parts marked by the letters A represent the bed-frame of a street-car; B, the wheels; C, the axles, the journals of which have bearings in boxes of ordinary construction. Upon the center of each axle is firmly secured a double draw-wheel, D, the central face of which separates the two sides $a b$. One side, a , is provided with ratchet-teeth, one of the edges of which is radial, and arranged so as to admit of being drawn in a certain direction,

while the other side, b , is provided with similar teeth, the radial or drawing edges of which, however, are placed in the reverse direction.

The two draw-bars E and H, running lengthwise of the frame, have an endwise movement in bearings d , which may consist of grooves formed in cross-pieces, or may be friction-rollers, as shown in Fig. 3. The end of one of the draw-bars projects from one end of the car, and the other projects from the opposite end. Thus one serves to draw the car in one direction, while the other serves to draw it in the opposite direction. One or more elastic rubber straps or other suitable springs, i , are attached by one end to each of the draw-bars, and by the other to the frame, and serve to draw back the draw-bar after the car has started.

A rubber pad or cushion, L, is attached to each draw-bar, which, when the latter is drawn out at starting, strikes against the cross-piece N, serving to break the force of the concussion that otherwise would ensue.

Upon the platform, near the position occupied by the driver, is a foot-lever, k , having, under the end to be depressed by the foot, a spring, n , and at the other end is pivoted the end of a bolt, p , which passes through the platform or cross-piece N, and into a hole, r , in the draw-bar, serving to hold the latter, and enabling the driver to control the application of the starter.

It will be noticed the hole r in the draw-bar is elongated. In practice, this elongation will be equal to three or four times the diameter of pin p . The purpose of this elongation is to insure at all times a certain degree of elasticity in the draft, which is effected by the endwise play thus afforded to the draw-bar.

While the arrangement of the foot-lever k and pin p , in connection with the elongated hole r , serves a desirable purpose, it is not essential to the proper working of the other parts of my starter. Each draw-bar has, directly over each of the axles, a draw-hook, e , affixed by bolt f in such manner as to afford to it the requisite swinging movement, and permit its engagement with the teeth of draw-wheel. The head e^1 of the draw-hook extends above the bolt, and its back portion

forms a beak or hook, e^2 , which, after the car is under way, comes in contact with the transverse rod h , whereupon the lower draw-hook part is thrown out of its engagement with the teeth, as seen in Fig. 1, and in the case of the draw-hooks attached to bar E in Fig. 3.

The operation of the starter is as follows: The draw-hooks, when at rest, are held disengaged from the teeth or draw-wheel by that part of the head e^2 which rests against the rod h . Previous to starting, the driver depresses the foot-lever k , which withdraws pin p , and upon the horses starting the draw-bar is drawn out, the draw-hooks swing forward and engage with the teeth of the draw-wheel, and thus the draft is applied directly to turning the wheels. As the car gets well under way, the tension of spring i gradually brings the car forward and the draw-hooks will be disengaged, as heretofore explained.

Having described my invention, I claim—

1. In combination, the double draw-wheel D, the teeth on the side a of which are ar-

ranged with their radial edges to draw in a certain direction, and the teeth on the side b to draw in the opposite direction, and the draw-bars E H, provided with the swinging draw-hooks e , having on the head the beak e^2 , and the transverse rods h , and the elastic rubber straps i , all arranged as shown and described.

2. In combination, the draw-bars E H, elastic rubber springs i , rubber cushion L, and the cross-piece N, as shown and described, and for the purpose specified.

3. The foot-lever k , having under one end the spring n , and pivoted at the other end to the bolt p , in combination with the draw-bar provided with elongated hole r and the rubber springs i , as shown and described, and for the purpose specified.

In witness whereof I hereunto sign my name.

CHARLES H. NYE.

Witnesses:

CHS. E. LEWIS,
JNO. S. MADDOX.