

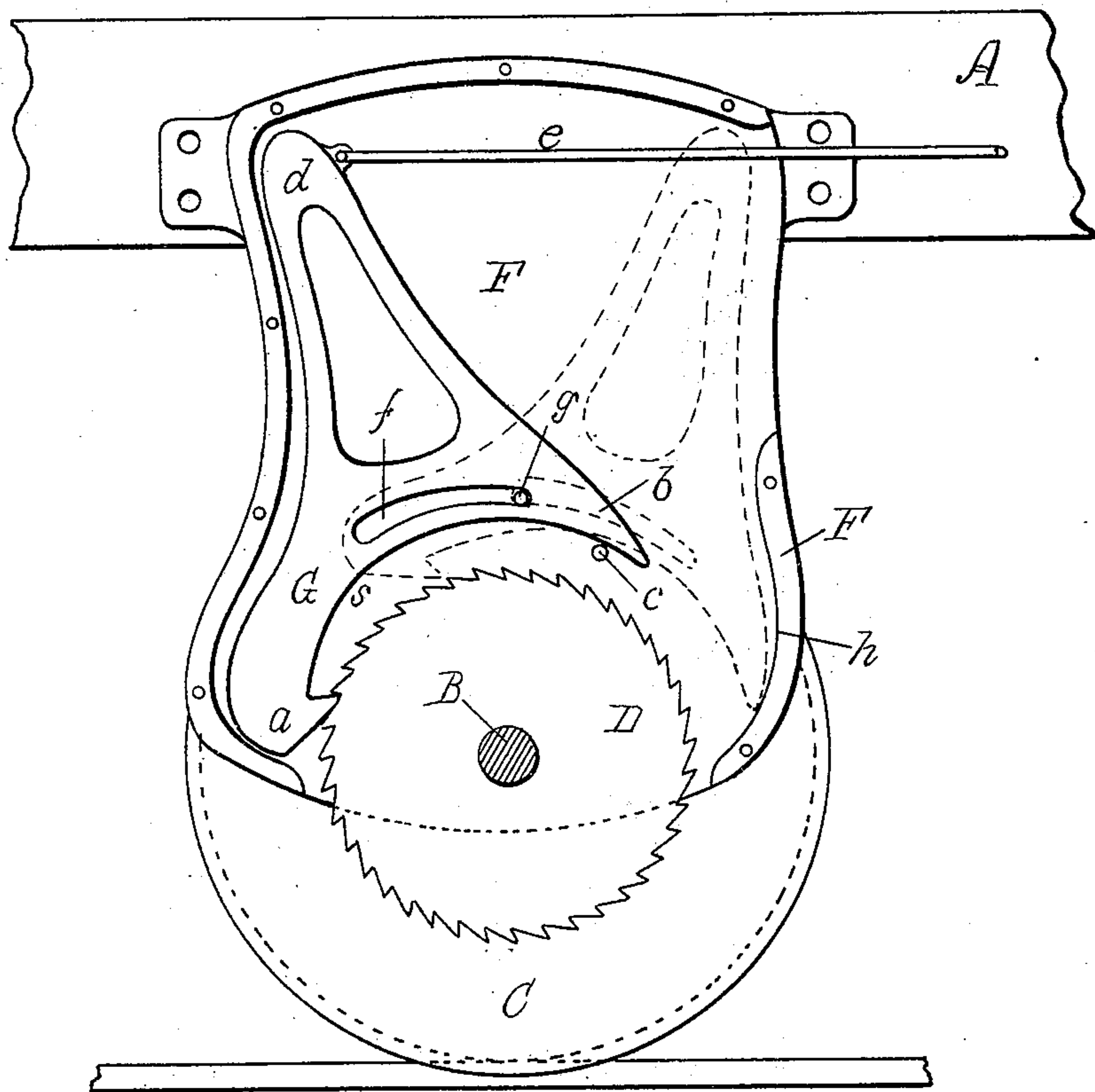
(No Model.)

D. L. BROWN.

CAR STARTER.

No. 373,437.

Patented Nov. 22, 1887.



Witnesses.
E. W. Chase,
H. E. Lodge

Inventor.
Dewalden L. Brown.
J. Curtis, Atty.

UNITED STATES PATENT OFFICE.

DEWALDEN L. BROWN, OF FRANKLIN, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO WILLIAM D. HUNTOON, OF SAME PLACE.

CAR-STARTER.

SPECIFICATION forming part of Letters Patent No. 373,437, dated November 22, 1887.

Application filed April 12, 1887. Serial No. 234,535. (No model.)

To all whom it may concern:

Be it known that I, DEWALDEN L. BROWN, a citizen of the United States, residing at Franklin, in the county of Norfolk and State of Massachusetts, have invented certain new and useful Improvements in Car-Starters; and I 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, reference being had to the accompanying drawing, and to letters or figures of reference marked thereon, which form a part of this specification.

This invention relates to "car-starters," so called, particularly that class which are provided with a ratchet or toothed wheel affixed upon the axle of a car, said ratchet to be operated by a pawl in connection with the draft mechanism employed, and by means of which an increased leverage is exerted upon the running-gear to overcome the inertia of the car when in the act of starting.

My improvements relate to and are embodied in the construction and in the manner of mounting and operating the pawl, which, in the present instance, is not attached to the axle of the car, but is located independently thereof and within a hollow bracket or hanger bolted beneath the body of the car.

The drawing hereto annexed represents a side elevation of a car-starter which embodies my invention, with one side of the bracket removed to show more clearly the location and relation of the pawl to the several co-operating parts which constitute the apparatus as an entirety.

In said drawing, A represents one of the longitudinal floor-stringers of a car provided with the usual running-gear, of which but one axle, B, and wheel C are here shown. Midway of the axle, and preferably in line with the pole or draft mechanism, I have disposed a toothed or ratchet wheel, D, which is affixed to and rotates in unison therewith. This wheel projects within and is partially inclosed by a hollow casting or hanger, E, vertically disposed transversely of the axle, which extends through its lower portion. Said hanger, for convenience of construction, is vertically divided and composed of two similarly-shaped pieces bolted together, only one of which, F, is here shown.

Within the chamber thus formed is located an oscillating gravity-pawl, G, an inverted V in shape, one foot of which is provided with the catch *a*, adapted to engage the teeth of the pawl, while the opposite but corresponding one, *b*, impinges upon a short horizontal pin, *c*, which is secured in and extends through the walls of the pieces F, comprising the hanger. The upper extremity, *d*, of this pawl is pivotally united with the rod *e*, which connects it with the draft mechanism.

To compel the pawl to properly perform its functions when actuated by a forward pull upon the rod *e* or cessation of such pull, I have arched or concaved the lower part of the perimeter of said pawl between the catch *a* and the foot *b*. This curved surface *s* contacts with the pin *c*, before alluded to. Centrally of and a short distance from the concave bounding-edge *s* of the pawl is formed a slot, *f*, of about the same curvature as said edge, concentric therewith, and which is adapted to receive a second horizontal pin, *g*, also affixed in the walls F of the hanger. These two pins *c* *g* operate, respectively, with the concave edge *s* and slot *f*, and control and direct the movements of the pawl, which not only oscillates, but reciprocates bodily upon the said pins during the rotation of the ratchet in the act of starting a car.

Since the pawl is actuated by gravity to return to its position, as shown, the catch *a* will normally contact with some one of the teeth of the wheel D; hence when a pull is exerted upon the upper end of the pawl pressure is at once brought upon the foot *b*, which now advances, wiping upon the pin *c*, with which it is in contact. Simultaneously therewith the pin *g* is free to move in the slot *f* as the pawl advances and compels the catch *a* from being disengaged from the ratchet-wheel. This oscillation and forward travel of the pawl G bodily continues, while at the same time the wheel and axle are forced to rotate, and thereby overcome the inertia of the car-body until the foot *b* of the pawl has reached the wall of the hanger, when its forward movement is checked, and it is now compelled to follow the contour of said hanger, here curved at *h* downwardly. The effect of this is to rock the pawl upon the pin *c* as a pivot, the slot *f* having sufficient

width to allow upward movement of the catch *a* to fully disengage it from the teeth of the ratchet-wheel. The pawl is now free, upon cessation of the pull, to drop back to its normal position, as shown. When in this position it serves as a brake, since the catch *a* is in engagement with a tooth, while the pin *g*, located in the extremity of the slot *f*, prevents reverse or backward motion of the wheel and car.

In the event of backing the car the pawl must be held disengaged, or in its forward and inoperative position, until such result is accomplished.

I claim—

1. In car starting mechanism, the combination, with a rotary axle provided with a toothed wheel affixed thereon, of an oscillating pawl adapted to reciprocate upon two pins transversely located within a hanger, substantially as described.

2. In combination with the chambered hanger and its pins, the oscillating loosely-mounted pawl which reciprocates upon said pins, its catch *a*, and the rotary toothed wheel, all operating as herein set forth.

3. The rotary shaft B, toothed wheel D, and chambered hanger E, with its pins *c g*, in combination with the operating-rod *e* and oscillating pawl G, concaved at *s*, and with the slot *f* and catch *a*, substantially as described.

4. The combination, with the rotary toothed wheel D, hanger E, and pins *c g*, of the oscillating pawl G, with its foot *b*, adapted to contact with the hanger at *h* to tilt the pawl, for purposes herein stated.

In testimony whereof I affix my signature in presence of two witnesses.

DEWALDEN L. BROWN.

Witnesses:

H. E. LODGE,
E. M. CHASE.