

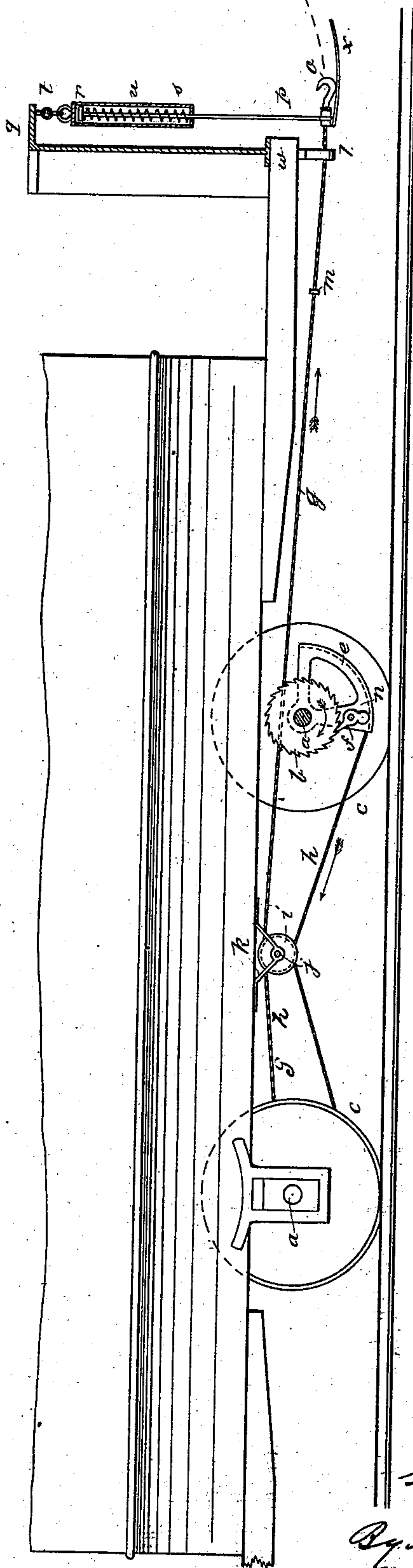
(No Model.)

H. H. HOLMES.

CAR STARTER.

No. 380,260.

Patented Mar. 27, 1888.



WITNESSES,

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CAR-STARTER.

SPECIFICATION forming part of Letters Patent No. 380,260, dated March 27, 1888.

Application filed December 5, 1887. Serial No. 256,936. (No model.)

To all whom it may concern:

Be it known that I, HENRY H. HOLMES, a citizen of the United States, residing at Jersey City, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Car-Starters; and I do 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 ap-
10 pertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention consists of contrivances for
15 the employment of an automatically-recoiling ratchet-lever starter, as hereinafter fully described, reference being had to the accompanying drawing, which represents a longitudinal sectional elevation of a street-car with the
20 appliances of a ratchet-lever starter as I arrange them.

On each axle *a*, I arrange a suitable ratchet-wheel, *b*, about midway between the wheels *c* and keyed fast thereto, with a gravitating quadrant-lever, *e*, fitted loosely on the axle along-
25 side of each ratchet-wheel and having a gravitating pawl, *f*, the said levers and pawls being arranged to hang downward normally, as represented in the drawing, and to engage and
30 turn the ratchet and the axle and wheels when shifted upward toward the center of the car, and to these ratchet-levers I connect the draft-
35 rods *g* of the respective ends of the car by chains *h*, passing over sheaves *i*, located on a shaft, *j*, mounted midway between the two
40 axles, the sheaves turning independently of each other, and the shaft being suspended from the car-body by any approved brackets *k*.

From the sheaves the draft-rods *g* extend
40 through the yokes *l* at the ends of the car, and each rod has a stop, *m*, that limits the extension of the draft-rod by coming in contact with the yoke when the ratchet-lever has turned to the limit of its range, and thereafter the draft
45 takes effect positively on the car by the stop and the yoke. When the draft slacks so that the gravity of the ratchet-lever overcomes the same, the said lever returns automatically, pulling back the draft-rod ready for again
50 taking effect, said lever being suitably weighted at *n* for the purpose.

By the employment of the gravitating lever working under the axle, as I have represented it, a longer, and therefore more effective, lever may be used than can be employed above the
55 axle and working forward, owing to the limited space between the axle and the body of the car. The two sheaves being mounted on one shaft, there is less complication and expense than
60 would be with separately-mounted sheaves. In this arrangement, by which the draft-hook is considerably extended beyond the yoke *l*, when drawing the car it is desirable to hold
65 up the extended hook to prevent it from sagging, particularly if a chain is used to connect the hook, and I therefore suspend it by a rod
70 or chain, *p*, from the top of the dash-board at *q*, or thereabout, said chain or rod being connected to the hook, so as to swing out with the hook when extended, as indicated in the dotted
75 lines, and I also make the same extensible, so that when the load may happen to be mainly in the rear of the car, so as to elevate the front
80 too high for the proper angle of the draft on the horses, the extension of the suspender by
85 the greater stress then taking effect on it will allow the draft-hook to range lower and move in the proper line of the draft, the yoke *l* being
80 suitably extended downward from the bottom of the car for the purpose.

The suspending-rod is of such length that the draft-hook drops to the bottom of the yoke when not in draft and rises when drawn out in the sweep of the suspender to a point that makes the angle of the traces about the same
85 as if the hook were fixed in the ordinary position on the ends of the platform.

For the suspender I prefer to employ an extension device, consisting of a tube, *s*, suspended by one or more links, *t*, and containing
90 a coiled spring, *u*, seated at the lower closed end of the tube and supporting the rod *p* on its upper end by a collar, *v*, the spring being strong enough to hold the hook up to the proper
95 position close under the end of the platform *w* when the car is in the normal condition, but adapted to yield when the platform rises unduly, as before stated.

I also provide the draft-hook with an even-
rest, *x*, which projects forward from the bot-
100 tom of the hook a suitable distance to serve for a support that relieves the driver somewhat in

connecting the evener by the car-hook, but is more specially useful in preventing (by so holding up the evener) the traces from sagging so much when the horses stop, as they do, when
5 (without such rest) both the evener and the whiffletrees are allowed to swing down and hang directly from the hook, which is a source of much trouble, owing to the horses stepping out of them when so low.

10 I am aware that a gravitating ratchet-lever combined with a ratchet-wheel on the axle and connected with the draft-rod by a chain passing backward over a sheave, and thence forward to the draft-rod, is not new, and I do not
15 claim such arrangement, broadly.

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

1. In a car-starter, the combination, with a ratchet-wheel, a gravitating ratchet-lever, and
20 a draft rod or chain to each axle, of a sheave for each draft-chain, both mounted on one shaft located midway between each axle, the said draft-chains being respectively connected with the levers, and passing thence backward
25 over a sheave and forward to the respective ends of the car and the draft-hooks thereat, substantially as described.

2. In a car-starter, the combination, with the

draft-hook, which in the operation of the starter shifts forward from the ordinary support at
30 the end of the platform and backward thereto, of a suspending rod or chain having support at or about the top of the dash-board, and connected at its lower end with the hook and adapted to shift forward and backward there-
35 with, substantially as described.

3. In a car-starter, the combination, with the draft-hook, which in the operations of the car-starter shifts forward from the ordinary support at the end of the platform and backward
40 thereto, of an extension suspending rod or chain having support at or about the top of the dash-board, and connected at its lower end with the hook and adapted to shift with the hook, and also to extend under the stress of the
45 draft when the platform rises abnormally, substantially as described.

4. The combination of the evener-rest with the draft-hook, substantially as described.

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

HENRY H. HOLMES.

Witnesses:

W. J. MORGAN,
S. H. MORGAN.