R. R. CARPENTER.

CAR-STARTER.

No. 187,355. Patented Feb. 13, 1877.

Fig. 1.

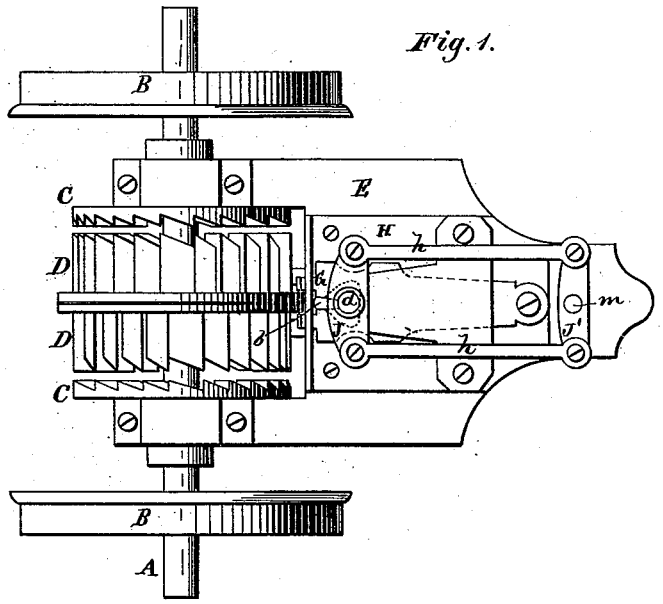


Fig. 2.

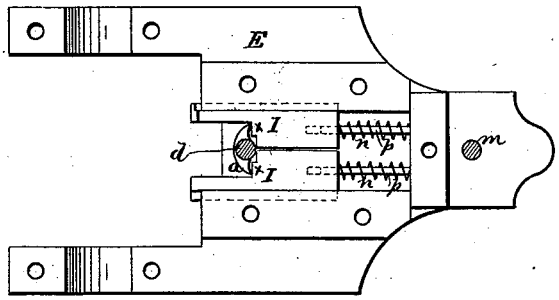
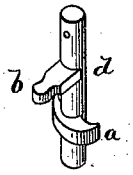


Fig. 3.



WITNESSES

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RALPH R. CARPENTER, OF TIPPECANOE, OHIO.

IMPROVEMENT IN CAR-STARTERS.

Specification forming part of Letters Patent No. **187,355**, dated February 13, 1877; application filed February 5, 1877.

To all whom it may concern:

Be it known that I, RALPH R. CARPENTER, of Tippecanoe, in the county of Miami, and in the State of Ohio, have invented certain new and useful Improvements in Car-Starters; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

The nature of my invention consists in certain improvements upon the device for stopping and starting railroad-cars, for which Letters Patent No. 88,447 were granted to me March 30, 1869, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a plan view of my invention. Figs. 2 and 3 are detailed views of parts thereof.

A represents the car-axle with the wheels B B secured thereon. On the axle A at suitable distance apart are secured two ratchet-wheels, C C, having the ratchet-teeth on their inner faces, and between these ratchet-wheels are loosely placed two shells, D D, having suitable ratchet-teeth, as shown, and within said shells is a spiral spring, one end of which is attached to one shell and the other end to the other shell. E is a box or frame hung on the axle A, and containing the fork-plate or forked lever G for moving the shells D laterally from side to side, and also the pawls I I for holding the shells stationary, or either one of them, so as not to revolve with the axle.

The general construction and operation of these parts is substantially the same as described in my former patent, above referred to. In that case, however, the forked lever G and pawls I I were located in one chamber and operated by one cam, which has been found objectionable, because the action of the spring had a tendency to bind the parts so tightly together that they could not be moved but with the greatest difficulty.

To obviate this trouble, I construct the box or frame E with two separate chambers divided by a plate, H, the pawls I I being placed in one chamber, and the forked lever G in the other chamber, so that whatever pressure the spring may exert on either one of the pawls I, the same will not bind on the forked lever; but said lever will be entirely free to operate. And I employ two cams, *a* and *b*, secured to a short shaft, *d*, for operating the lever and pawls.

The cam *a* operates against shoulders *x x* on the pawls I I, while the cam *b* is within the other chamber and operates in the fork of the lever G, said lever being pivoted at its outer end, as shown.

On the end of the shaft *d* is secured a plate or lever, J, the ends of which are, by rods *h h*, connected with the ends of a similar plate or lever, J′, secured on the usual brake rod or shaft *m*, so that by turning the same in either direction the shaft *d* will be correspondingly turned, and the cams *a b* operate their respective parts as required.

The pawls I I are pressed outward independently of each other by means of spiral springs *n n* placed around pins *p p*, which act as guides for the pawls. These parts are all inclosed within the box E, so as to be protected from mud, snow, &c.

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

1. The box or frame E, divided by means of the plate H into two separate and independent chambers for containing the pawls I I in one chamber and the forked lever G in the other chamber, substantially as and for the purposes herein set forth.

2. The combination of the pawls I I, the forked lever G, placed in separate chambers in the box E, and the cams *a* and *b*, secured upon the shaft *d*, substantially as and for the purposes herein set forth.

3. The combination of the pawls I I, pins

p p, and springs *n n*, all inclosed and concealed within the box E, for the purposes herein set forth.

4. The combination, with the pawls I I and forked lever G, of the shaft *d* with cams *a b* thereon, the lever J, connecting-rods *h h*, and the lever J′ on the brake-rod *m*, substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 5th day of February, 1877.

RALPH R. CARPENTER.

Witnesses:
J. M. MASON,
FRANK GALT.