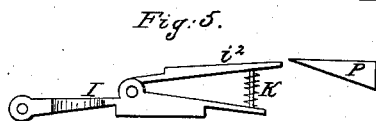
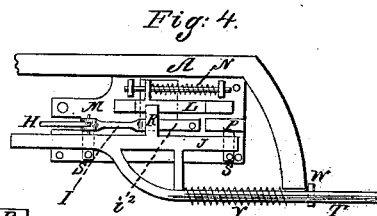
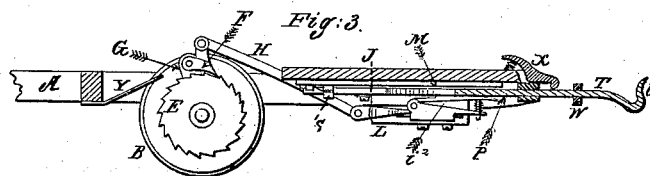
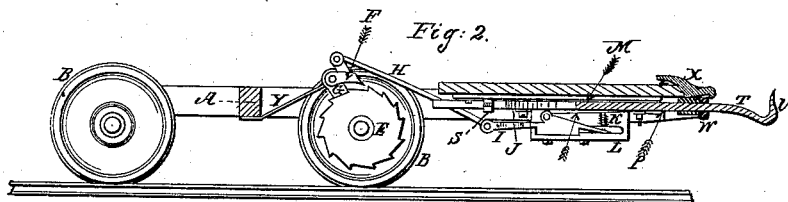
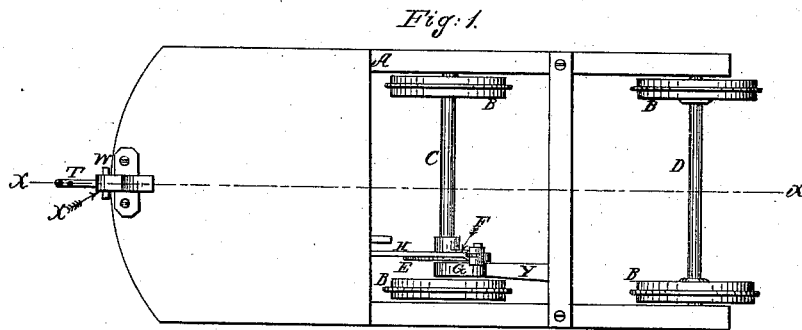


WRIGHT & WANDELL.

Car Starter.

No. 111,294.

Patented Jan. 24, 1871.



Witnesses:
Charles L. Barrett.
Franklin Barrett

Inventors:
Finley S. Wright.
Langston W. Wandell.

United States Patent Office.

FINLEY J. WRIGHT AND LIVINGSTON W. WANDELL, OF NEW YORK, N. Y.

Letters Patent No. 111,294, dated January 24, 1871; antedated January 21, 1871.

IMPROVEMENT IN CAR-STARTERS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that we, FINLEY J. WRIGHT and LIVINGSTON W. WANDELL, of the city, county, and State of New York, have invented certain new and useful Improvements in Railroad-car Starters; and we do hereby declare that the following is a full description of the same.

The nature of our invention consists in combining with the coupling-rod, or hook-bar to which the horses are attached, a self-acting spring-latch, so that when the horses first draw against the car it will engage into the spring-latch and draw that forward at the same time, and thus, by means of a connecting-rod, operate a pawl and ratchet-wheel on the axle of the front set of car-wheels to start the car forward, before the full force of the horses is exerted to overcome the inertia of the car.

But to describe our invention more particularly we will refer to the accompanying drawing forming a part of this specification, the same letters of reference wherever they occur referring to like parts.

Figure 1 is a plan view of the truck, with the apparatus attached thereto.

Figure 2 is a longitudinal section of the same, through the line *xx*, fig. 1.

Figure 3 is the same, with the coupling-rod drawn out and the pawl engaged in the ratchet-wheel starter.

Figure 4 is a detached plan view of the working part of the apparatus, as seen when the flooring of the truck is removed.

Figure 5 is a detached view of the spring-latch.

Letter A represents the truck-frame, and

B, the car-wheels, secured on axles C and D and suitable bearings to the truck-frame.

On the forward axle C is secured a ratchet-wheel, E, which is acted upon by a pawl, F, secured to a lever, G, working loosely beside the ratchet-wheel and on the axle C.

To the upper end of the lever G is attached by a joint a connecting-rod, H, which, at its opposite end, is joined by a hinge to the end of a sliding spring-latch, I.

This latch is composed of a sliding plate and a hinged latch-plate, *i*, which is kept distended or in contact with the catch R on the starter-plate J by means of a spring K, arranged between the ends of the plates I and *i*.

By means of the guide-ways L it is secured to a bed-plate, M, attached to the lower side of the flooring of the car, so as to work longitudinally.

To react it, when released from the starter-plate, a spiral spring, N, or other suitable device, is arranged on the bed-plate M in such a position alongside

of the spring-latch that a projection on it will compress the spring, when drawn forward, till released from the starter-plate, when it will react, and thus set the pawl back on the ratchet-wheel ready for a new start.

For the purpose of releasing the spring-latch from the starter-plate, a wedge-shaped cam, P, is secured to the bed-plate in front of the spring-latch *i*, so that, as it is drawn forward by the catch R on the starter-plate, the latch will be depressed by riding up the incline of the wedge, and thus liberate it to react by means of the spring N.

Letters S, are slide-ways attached to the lower side of the bed-plate for the starter-plate to run in.

To one side of the starter-plate, and forming a solid connection therewith, is the coupling-rod T, which extends out through an opening in the center of the front rail of the truck-frame, and terminates in a hook, U, to which the horses are to be attached to draw the car.

Letter V is a reacting spring secured upon the coupling-rod so as to act against the inside of the front rail of the truck-frame that, when the horses slack up, after first starting the car, the rod will be retracted till stopped by the washer W against the outer face of the front rail of the truck-frame.

This washer is also intended to operate as a catch to engage into a spring foot-latch, X, secured on the front end of the truck, so that, till released by the foot of the car-driver at the time of starting, the draft of the horses will be entirely against the washer and latch, and thus avoid any strain on the reacting springs or starting apparatus.

The operation of the starter is as follows:

When the car is at rest the coupling-rod is retracted, as shown in fig. 2, and the foot-latch X is upon the catch or washer W, at the same time the pawl is relieved from the ratchet-wheel and prevented from falling back too far by a stop-plate, Y, while the catch R, on the starter-plate, is engaged in the spring-latch *i*, so as to connect the same with the coupling-rod.

On starting the horses the driver presses his foot upon the foot-latch X, and thus allows the coupling-rod to draw forward, as shown in fig. 3.

By this operation the pawl is made to engage into the ratchet-wheel and the whole car rolled forward or started in motion, by which time the sliding spring-latch rides up the inclined face of the cam P and unlatches it from the catch R on the starter-plate, and thus transfers the entire draft to the coupling-rod, which, on the least slack-up of the horses, retracts and is caught and held by the foot-latch, ready for a repetition of the same operation.

Having now described our improvement and its operations, we will proceed to set forth what we claim and desire to secure by Letters Patent of the United States.

1. The combination of the coupling-rod T, starter-plate J, and catch R, with the sliding spring-latch I and i^2 , for the purposes and operating substantially as hereinbefore described.

2. The combination of the spring-latch I and i^2 , with the wedge-shaped cam P, for the purposes and operations substantially as hereinbefore set forth.

3. The combination of the starter-plate J, and spring-latch I and i^2 , with the pawl F and ratchet-wheel E, for the purposes and operations substantially as hereinbefore set forth.

FINLEY J. WRIGHT,
LIVINGSTON W. WANDELL.

Witnesses:

CHARLES J. BARRITT,
FRANKLIN BARRITT.