L. Rodenhausen.

Car-Starter.

No. 75981 Patented Mar. 24 1868.

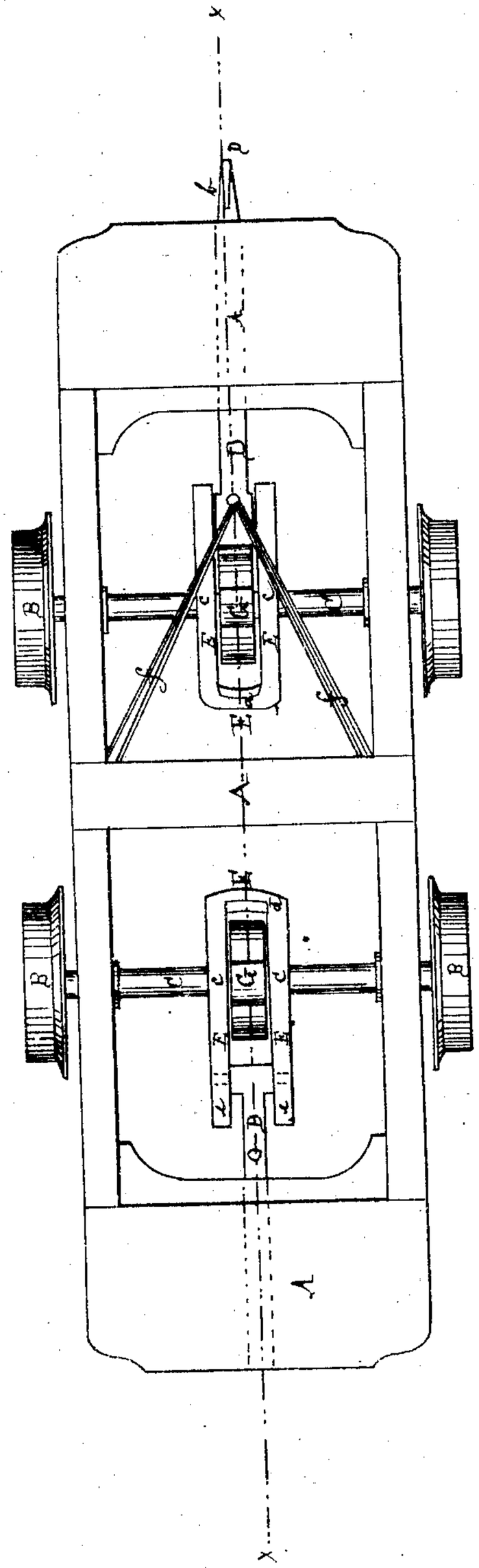

Fig. 1.

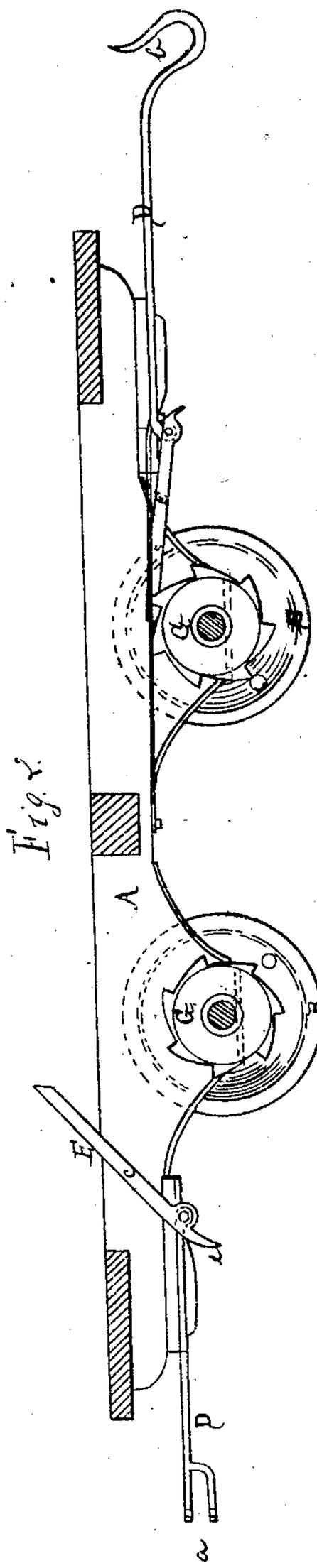

Fig. 2.

Witnesses.

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LEONHARD RODENHAUSEN, OF PHILADELPHIA, PENNSYLVANIA.

Letters Patent No. 75,981, *dated March* 24, 1868.

IMPROVED CAR-STARTER.

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

TO ALL WHOM IT MAY CONCERN:

Be it known that I, LEONHARD RODENHAUSEN, of the city and county of Philadelphia, and State of Pennsylvania, have invented a new and useful Improved Car-Starter; and I do hereby declare the following to be a clear and exact description of the nature thereof, sufficient to enable others skilled in the art to which my invention appertains to fully understand and use the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure I is a top or plan view of the device, illustrating my invention.

Figure II is a vertical longitudinal section thereof, in line *x x*, Fig. I.

Similar letters of reference indicate corresponding parts in the two figures.

My invention is a new device for starting street-cars generally, and consists in applying a ratchet to the axle and a loop to the tongue or draw-bar, which loop shall catch over the teeth of the ratchet, so that when the horses are started power will be communicated directly to the axles, thereby rotate the wheels and move the car. So soon as the loop has been drawn clear of the teeth, it will remain inoperative until the car is stopped, when loop will drop on the ratchet again, ready to turn the wheels when the horses are started, and so on, so long as desired.

In the drawings, A represents the truck of a street-car, having the ordinary wheels B and axle C. D is the tongue or draught-pole, but when this is dispensed with, it is substituted by a draw-bar, both for the purpose of attachment to the traces of the horses, for propelling the cars as usual. Each tongue, pole, or draw-bar passes through an opening in the ends of the car, either under the platforms, or in suitable draw-heads, and has a certain longitudinal play therein, which is limited at the outer end by the cars *a*, which receive the coupling-pins or a hook, *b*, for the ring behind the double-trees, or by stop-pins, or any suitable appliances. The inner end of the tongue or bar D has hinged, pivoted, or jointed to it an open frame or loop, E. This loop is constructed of suitable metal, and should be sufficiently strong for the purpose intended. It consists of two side-pieces, *c c*, and a connecting end-piece, *d*, forming three sides of a square, and having an open side, which faces the tongue or draw-bar D, and at this open end I pivot or hinge said tongue D to the sides *c* of the loop, near their ends.

It will now be noticed that, if the tongue or draw-bar is drawn out or is pushed in, it will carry with it the loop or frame in either direction, but it limits the outward play of the tongue or draw-bar.

The outer ends of the sides *c* are cut away, bevelled, or curved, as shown at *e*, so that when the loop is drawn out its end, *e*, will strike the opening through which moves the draw-bar or tongue, and cause the loop to swing upwards, as shown in Fig. II. This loop is arranged over the axles of the wheels, and its sides, *c d*, encircle a ratchet, G, which is keyed, or otherwise secured to the axle, at or about the centre thereof. The ratchet G being of ordinary construction, and consisting of a body or disk with the usual teeth, is applied to each axle. The teeth point inwardly, and are adapted to be caught by the side, *d*, of the loop, which side is bevelled on its inner face, so as to more readily take hold of the shoulders of the teeth.

When the car is at a state of rest, the sides *c c* of the loop or catch E straddle or encircle the rachet below the periphery, while the end, *d*, is entirely or almost in contact with one of the teeth. So soon as the horses are started, and the tongue or bar D drawn forward, the catch or loop E will follow. Now, as the end, *d*, is held against one tooth of the ratchet G, it is evident that the ratchet must likewise move, and thereby cause the wheels to rotate. This will start the car, and, as soon as the catch or loop is drawn sufficiently forward, its end, *d*, will clear the tooth. The bevelled ends *e* of the sides *c* then strike the edges of the opening for the tongue or bar D, and cause the loop or catch to swing upward and entirely free from the ratchet. The car will then be drawn as ordinarily.

When the car is to be stopped, it is well known that its momentum causes it to run or slip a certain distance, even when the brakes are applied and the horses are at stand-still. Now, in this case, the tongue is always thrown upward, but, when my device is applied, it either remains still or slides towards the rear of the car. The same is true when draw-bars are employed. Consequently, the loop or catch E is liberated, so that

it falls and slips over the ratchet, while the end, *d*, is again ready to take hold of the tooth, with which it comes in contact, and operates the ratchet to start the car, as has been hereinbefore described.

A cam, stop-pin, or incline could be secured to the truck to cause the catch or loop to be thrown up, but, as the result is the same, I do not limit myself thereto.

The teeth of the ratchet could be formed on the faces of a disk secured to the axle, and a vertical catch or loop might be employed, having a spring, or equivalent device, to cause the catch to bear against the teeth, when it returns to operate the ratchet, or a spring, *f*, may be secured to the truck, and connected to the draw-bar or tongue, or to the catch, so as to assist the operation of bringing the loop back again over the ratchet, but, as the loop or catch will fall by its own gravity, and the sliding bar or tongue always carries it behind the teeth, I prefer to dispense with such additional parts, but they may be employed, if deemed necessary.

In streets where the grade ascends, and there is a tendency of the car going backwards when it is stopped, the catch taking hold of the ratchet will prevent such backward movement, and this feature is an important part of my invention.

Instead of the catch consisting of a loop or open frame, it may be formed of a bar with a hooked end, to drop over the teeth of the ratchet, but it operates the same, and I therefore do not limit to the exact construction of said part.

When the draw-bar or tongue is drawn out to its full extent, it can be prevented from returning when desired, by means of a pin dropped through the platform into an opening in the bar or tongue.

My device is simple, practical, and useful, and is designed to supply a want long experienced and known in cities having street-cars.

I hereby disclaim as any part of my invention the devices shown in the patent of William Palmer, dated October 3, 1854; but

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

The catch E, attached directly to the tongue or draw-bar D, and employed in combination with a ratchet-wheel secured to the centre of the axle, all arranged and constructed to operate as herein described and represented.

To the above, I have signed my name, this 6th day of January, 1868.

LEONHARD RODENHAUSEN.

Witnesses:

JOHN A. WIEDERSHEIM,

WM. A. WIEDERSHEIM.