W. C. WRIGHT.

Car Starter.

No. { 133, 31,137. {

Patented Jan. 15, 1861.

Fig. 2.

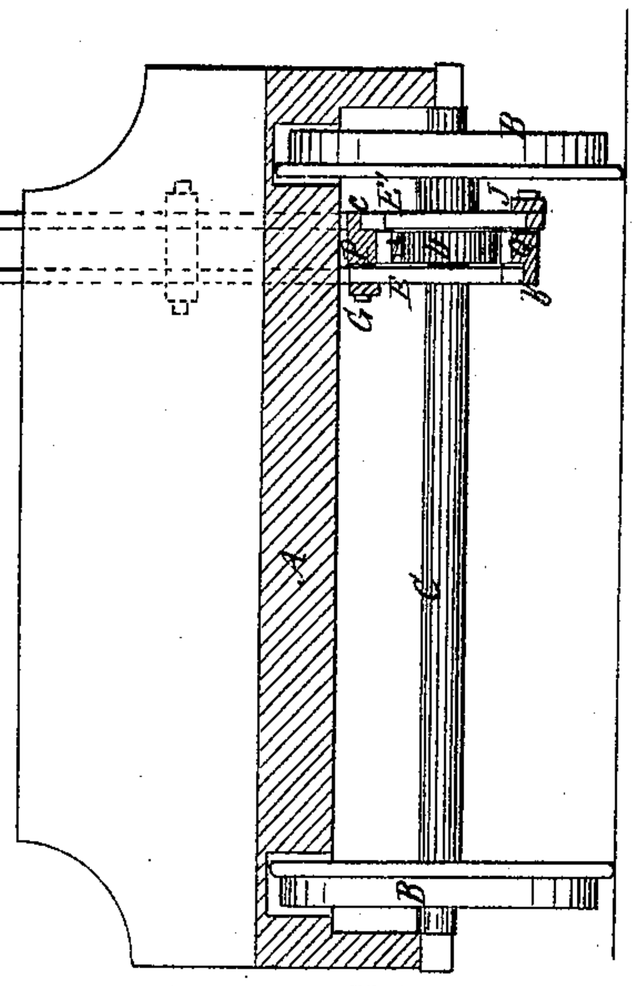


Fig. 1.

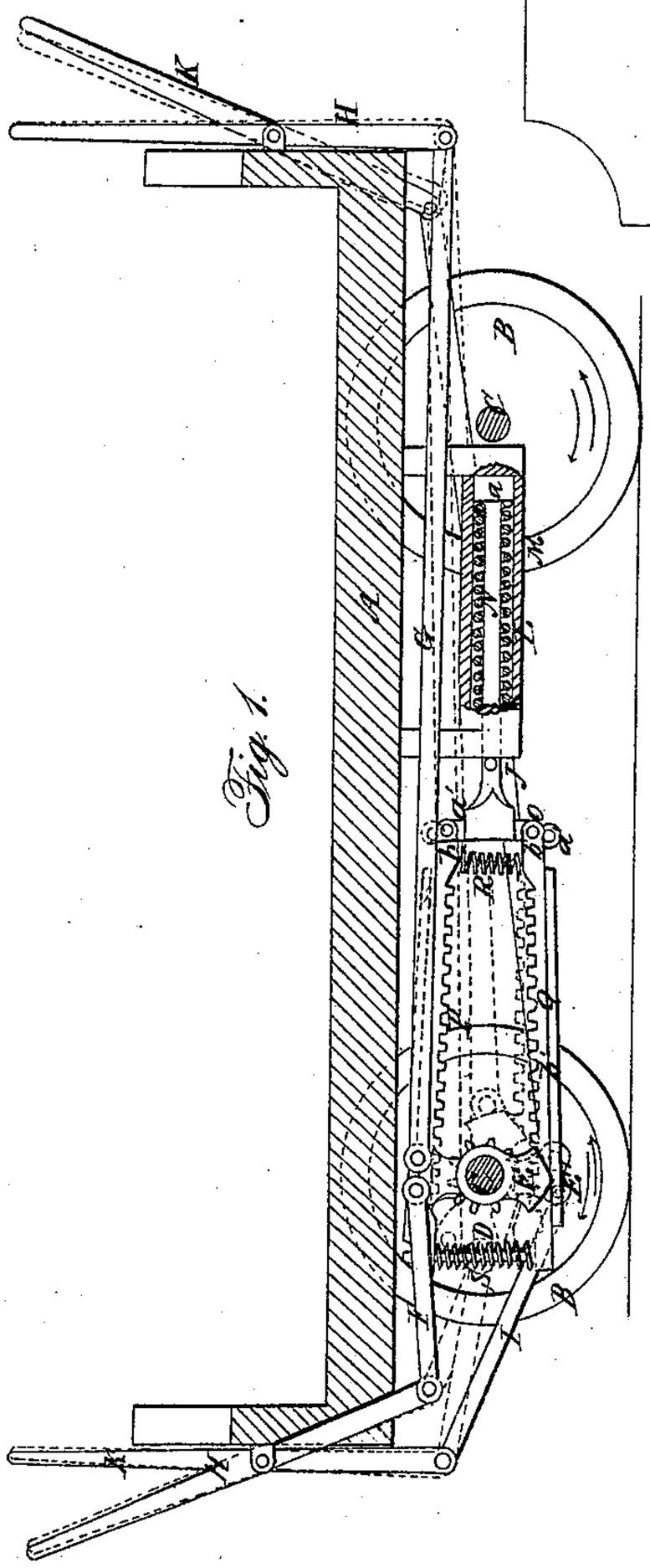
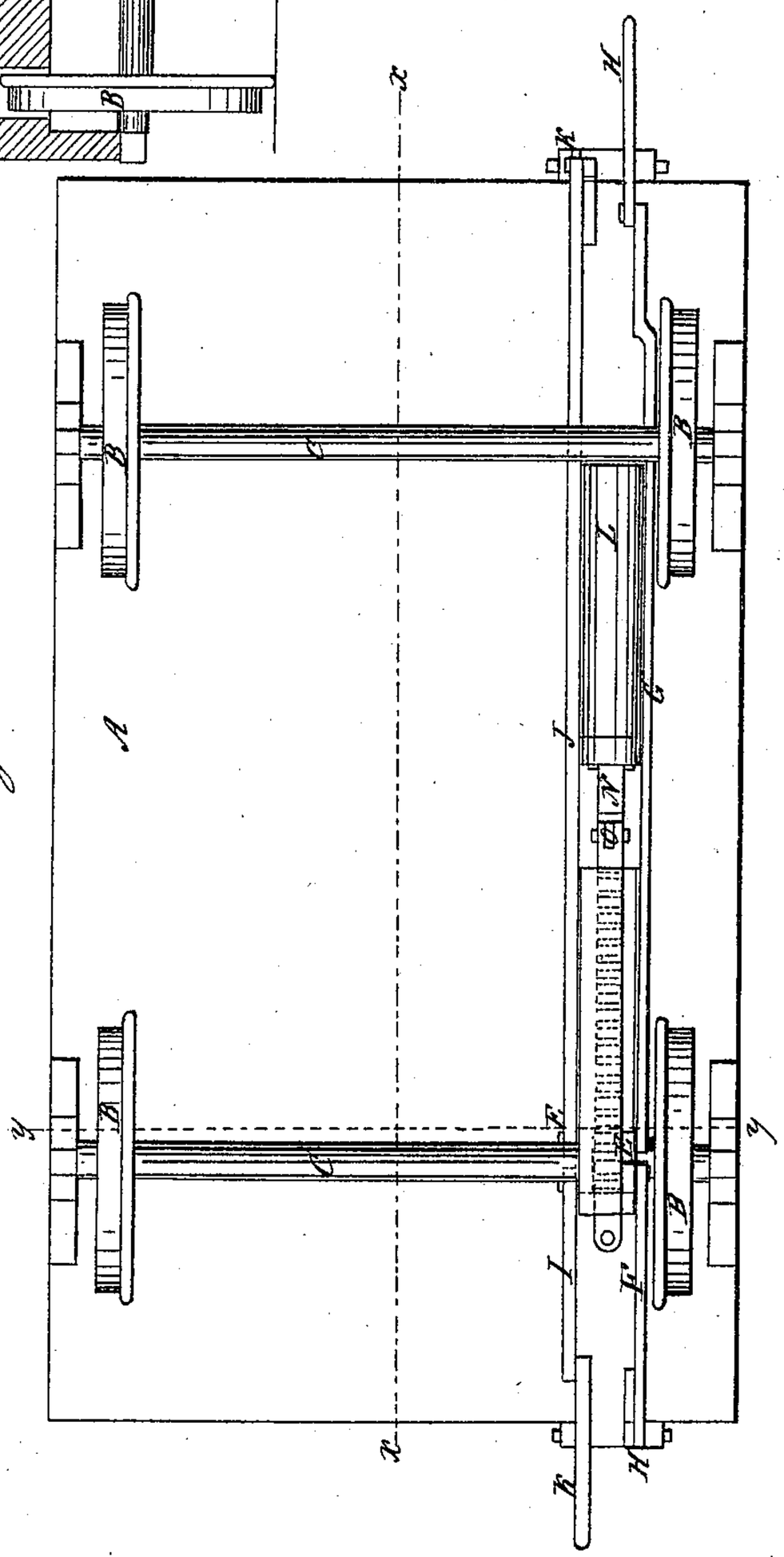


Fig. 3.



Witnesses:

C. M. Crumpton

E. W. Reed

Inventor:

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UNITED STATES PATENT OFFICE.

W. C. WRIGHT, OF NEW YORK, N. Y.

CAR-BRAKE.

Specification of Letters Patent No. 31,137, dated January 15, 1861.

To all whom it may concern:

Be it known that I, W. C. WRIGHT, of the city, county, and State of New York, have invented a new and Improved Car-Brake; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a side sectional view of my invention taken in the line *x*, *x*, Fig. 3. Fig. 2 a transverse vertical section of the same, taken in the line *y*, *y*, Fig. 3. Fig. 3 an inverted plan of the same.

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

This invention relates to an improved brake for city railroad cars or those which are drawn by horses, the brake being of that class which applies the power used to stop the cars, in starting them again.

The object of the invention is to obtain a simple device which will effect the desired end and one which may be used in all cases, that is to say, with or without a starting power.

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A, represents the bottom of a car, B, the wheels and C, the axles. These parts may be constructed and arranged in the usual way and therefore do not require a minute description.

On one axle C, there is placed a pinion D, and at each side of the pinion there is a cam E, and E′. These cams are placed loosely on the axle so that the rotation of the latter will not affect them in any way. The cams may be described as being simply short arms the axle passing through their centers.

To the upper end of the cam E, bars F, G, are attached. These bars extend to the ends of the car and they have hand levers H, connected to them. The lower end of the cam E′, has similar bars I, J, attached, said bars also extending to the ends of the car and having levers K, connected to them.

Underneath the bottom A of the car there is secured a cylinder L, in which a spiral spring M is placed and N is a rod which passes longitudinally into the cylinder and around which the spring M is fitted as shown clearly in Fig. 1. The inner end of the rod N has a head *a*, upon it to prevent the rod drawing through the spring. The outer end of the rod N, has a cross head O, attached, said head being slotted longitudinally at each end as shown at *a′*.

P, Q, represent two racks which are attached at their inner ends to the cross head O, by pins *b*, which pass through the slots *a′*, of the cross head. The rack P, is above the pinion D, and the rack Q, below it, and the two racks are connected at their inner ends by a spring R, which has a tendency to draw the two racks toward each other. The racks at their outer parts are also connected by a similar spring S. The cam E, bears against a cleat or projection *b′*, which is attached longitudinally to the rack Q, and the cam E′, bears against a similar cleat *c*, attached to rack P.

The operation is as follows: When the wheels B, are turning in the direction indicated by the blue arrows see Fig. 1, and it is desired to stop the car and accumulate a power to assist in starting it, the driver actuates one of the levers H, so as to turn the cam E, from a vertical position and allow the springs R, S, to draw the rack Q, in gear with pinion D, it being understood that the cams E, E′, when in a vertical position keep both racks free from the pinion. When the rack Q, is in gear with the pinion D, and the wheels B, turning as indicated by the blue arrows, the rod N, will be drawn outward from cylinder L, and the spring M, compressed, the latter being sufficiently strong to serve as the brake, and stop the car. When it is desired to start the car again the operator by actuating one of the levers K, throws the rack P, in gear with pinion D, and then throws the rack Q, out of gear with said pinion, and the compressed spring M, will have a tendency to turn the pinion D, and wheels B, in the direction indicated by the blue arrows, and thus aid the team in starting the car. In case the car is moving in the direction indicated by the red arrows, and it is desired to stop the car and accumulate power to assist in starting it, the rack P, is first thrown in gear with pinion D, and afterward the rack Q, when rack P, is disengaged from the pinion. When it is desired to simply "brake up," the car without accumulating any reserve power to assist in starting, the rack which is thrown in gear with the pinion to compress the spring M, is merely thrown out of gear with it after the car has stopped

or its motion been sufficiently retarded. In case it is designed to stop the car suddenly both racks are simultaneously thrown in gear with the pinion D, and the axle on which the pinion D, is placed is effectually locked.

This arrangement is exceedingly simple and efficient and may be applied at a small cost.

Springs have been applied to cars and arranged with racks so as to be compressed by the motion of the cars, the springs serving as brakes to stop the cars and also as a reserve to assist in starting them; but, so far as I am aware two racks have not been arranged with a pinion, bars, cams, and levers as hereing shown and described whereby the car may be stopped, when moving in either direction, by the resistance of the spring, and with a reserve power to assist in starting it, or instantly stopped when desired without a reserve power. This latter result forms the distinctive feature between mine and other inventions of the same class.

I do not claim broadly a spring applied to a car and arranged with a rack and pinion in such a way that the spring will be compressed by the motion of the car, and the latter stopped thereby, for such device has been previously used; but

I do claim as new and desire to secure by Letters Patent,

The spring M, rod N, pinion D, and the two racks P, G, when the latter are arranged or used in connection with the cams E, E′, bars F, G, I, J, and levers H, K, or other equivalent devices for operating them as and for the purposes set forth.

W. C. WRIGHT.

Witnesses:

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