

J. A. EMERICK.

Car Starter.

No. { 1,123. }
32,127. }

Patented Apr. 23, 1861.

Fig. 2.

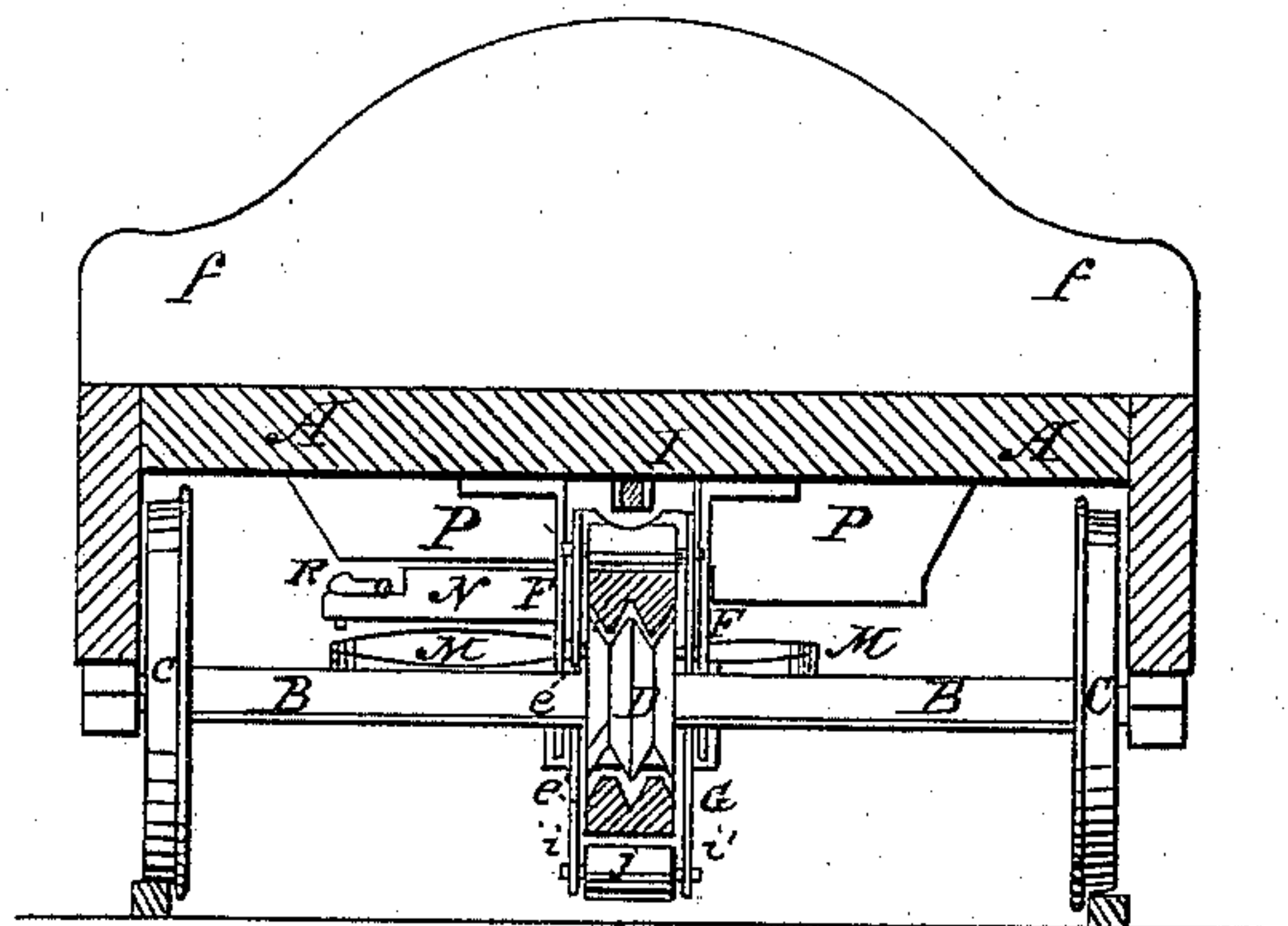


Fig. 1.

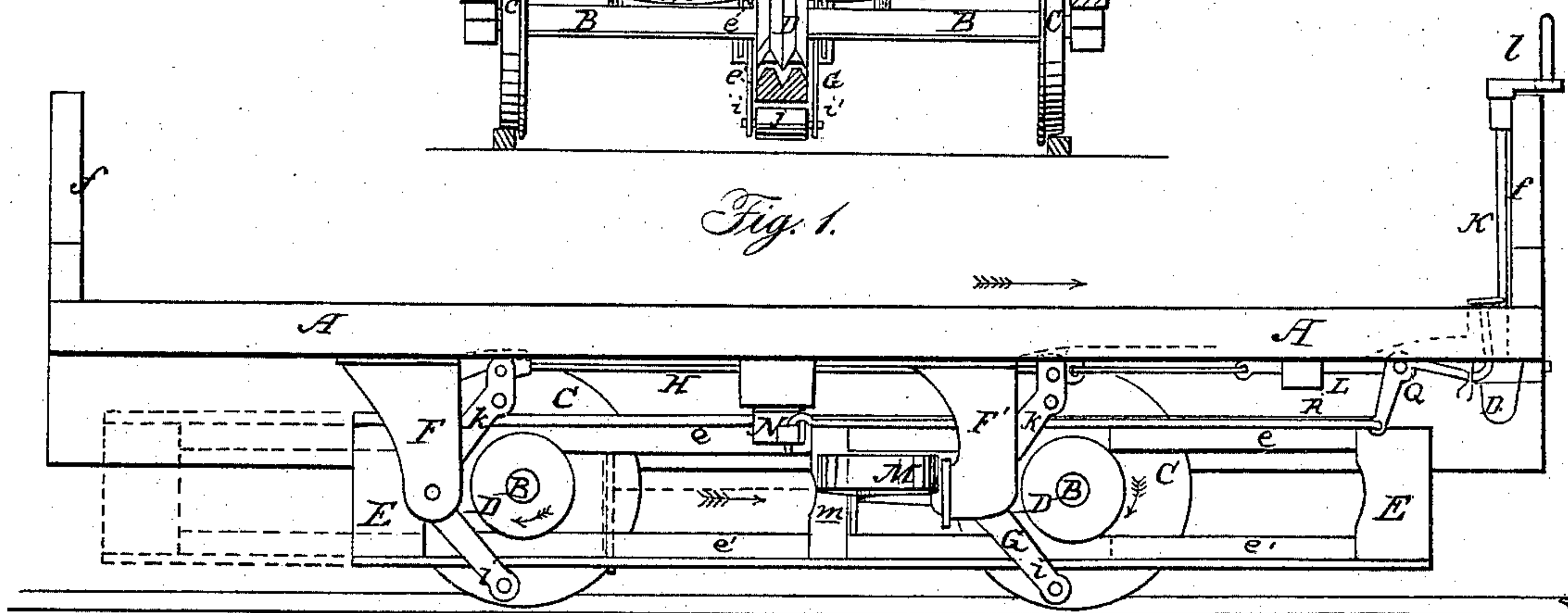
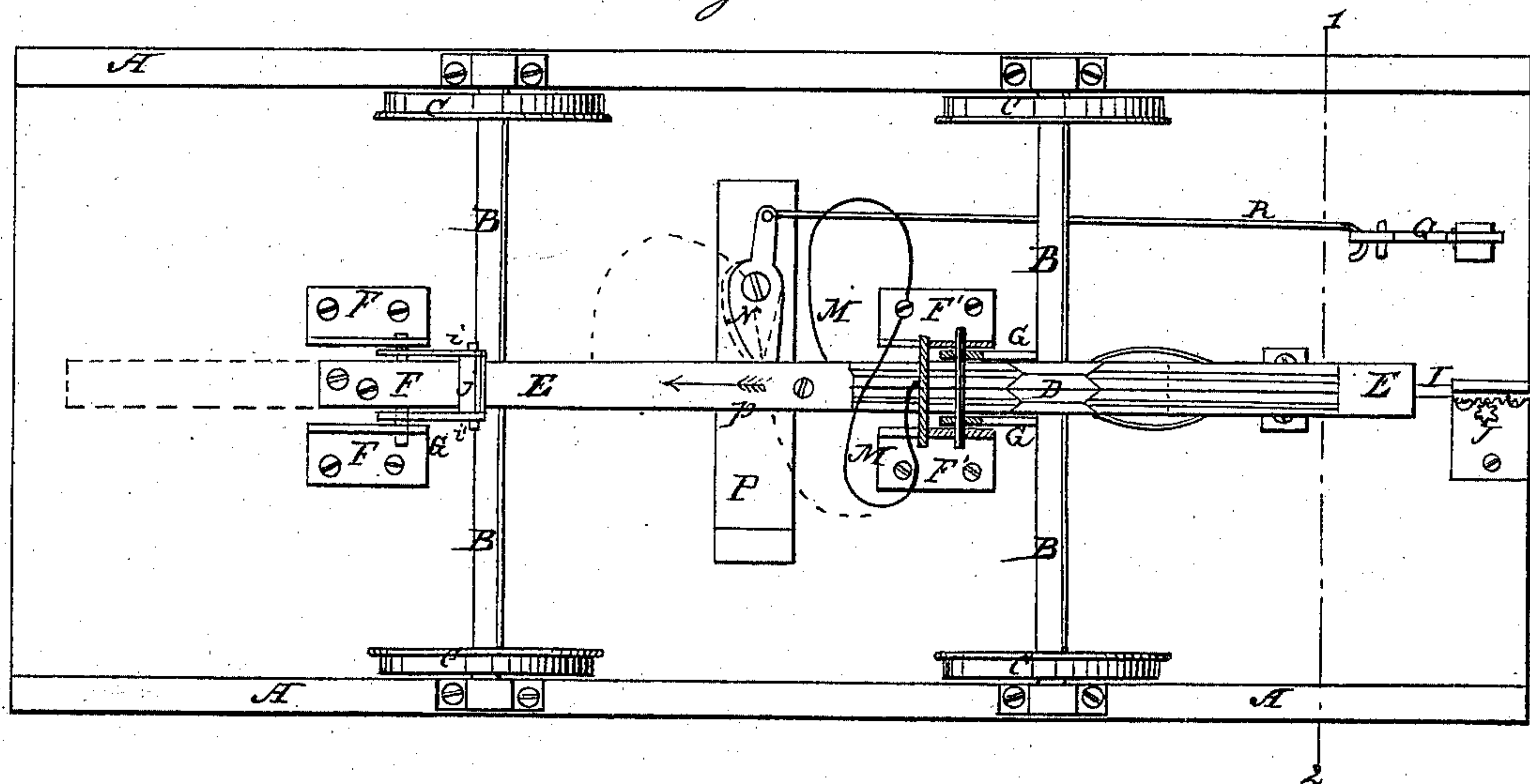


Fig. 3.



Witnesses:

Saml Harwood
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UNITED STATES PATENT OFFICE.

JOHN A. EMERICK, OF PHILADELPHIA, PENNSYLVANIA.

STOPPING AND STARTING RAILWAY-CARS.

Specification of Letters Patent No. 32,127, dated April 23, 1861.

To all whom it may concern:

Be it known that I, JOHN A. EMERICK, of Philadelphia, Pennsylvania, have invented a new and Improved Device for Stopping and

Starting Railway-Cars; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing and to the letters of reference marked thereon.

My invention relates to improvements in apparatus in which the power required to stop a railway car is absorbed by a spring which subsequently gives out the power thus absorbed, to assist in starting the car, and my improvements consist of a sliding frame having V shaped ribs, with certain pulleys or wheels secured to the axles of the car and having V shaped grooves, two levers or their equivalents, and a spring of any suitable form, the whole being arranged and operating as described hereafter.

My invention further consists of a device for locking, retaining, and releasing the said sliding frame.

In order to enable others to make and use my invention I will now proceed to describe its construction and operation.

On reference to the accompanying drawing which forms a part of this specification, Figure 1 is a side view of sufficient of a city railway car to illustrate my improved stopping and starting device; Fig. 2 a transverse section on the line 1, 2, and Fig. 3 an inverted plan view.

Similar letters refer to similar parts throughout the several views.

A represents the frame and platform of an ordinary car such as is used on city railways, B, B being the two axles carrying the usual flanged wheels C, C. Each axle has a central pulley D in the periphery of which are cut V shaped grooves adapted to receive similarly shaped ribs formed on the underside of the upper bar *e* and on the upper side of the lower bar *e'* of the frame E, the latter being arranged to slide longitudinally on the underside of the car frame, as well as to have a vertical movement to an extent limited by the central pulleys D, D, which are of such a diameter compared with the distance between the said upper and lower bars of the sliding frame, that, when the upper bar is in contact with the pulleys the lower bar is free from contact with the same, and vice versa.

To the underside of the car frame are se-

cured the brackets F, F and F', F', each pair of brackets carrying a double bell crank lever G, the lower arms *i* and *i'* of each double lever carrying a roller *j* so situated as to bear against the lower bar *e'* of the sliding frame E, the upper arms of each of the said double bell crank levers carrying a similar roller for bearing against the upper bar *e* of the sliding frame. These two bell crank levers are connected together by means of the rod H and both levers are connected to a bar I which is arranged to slide longitudinally in suitable guides on the under side of the car frame, this bar being furnished with teeth gearing into the teeth of a pinion J on the lower end of the vertical shaft K which is hung to the inside of the dash board *f* and is furnished with a suitable handle *e* within reach of the driver.

M is a bent spring one end of which is connected to the vertical bar *m* of the sliding frame the opposite end being attached to a plate at the rear of the brackets F', F', the spring being so arranged as to force the sliding frame in the direction of the arrow Fig. 3 and to the position shown by red lines when the said frame is not retained by a lever N in conjunction with a shoulder *p* formed on a strip P secured to the underside of the car frame. This lever N is connected by a rod R to a bell crank lever Q which is hung to the underside of the car frame, one arm of the lever projecting through an opening in the platform near the dashboard *f* so as to be within reach of the driver's foot. A spring *n* so acts on this bell crank lever as to retain its projecting arm or treadle in an elevated position when not depressed by the driver's foot, the same spring having also a tendency to maintain the point of the lever N in contact with the side of the sliding frame which is thus tightly jammed between the said lever and the shoulder *p* on the strip P at all times excepting when the driver's foot is applied to the lever Q.

Supposing the car to be moving in the direction of the arrow Fig. 1 and the wheels and axles with the central grooved pulleys D to be consequently moving in the direction of their arrows, when the driver desires to stop the car he turns the handle *l* and with it the spindle K moving the two double bell crank levers G, G simultaneously and causing their upper rollers to bear against the upper bar *e* of the sliding frame E and

pressing the V shaped ribs of the said bar into the V shaped grooves of the central pulleys D the lower bar *e'* of the frame being, as before remarked, free from contact with the pulleys. That movement of the car wheels which immediately precedes the stoppage of the car will through the frictional contact of the bar *e* of the sliding frame with the central pulleys move the said frame in the direction of the arrow Fig. 1, and from the position shown in red to that shown in black lines in the same figure, thereby compressing the spring and causing it to assume the form represented in the inverted plan view Fig. 3. As the sliding frame is rendered self locking by the lever N the spring is retained in the position to which it has been compressed and thus the power required for stopping the car, and absorbed by the spring is held in reserve to be used as a medium for assisting to start the car. When this is required the driver in the first instance turns the handle I and with it the spindle K so as to operate the double bell crank levers G, G and cause their lower rollers *j* to bear against the underside of the sliding frame thereby raising the latter and bringing its lower bar *e'* into contact with the central grooved pulleys D, D while the upper bar *e* of the same frame is raised free from contact with the said pulleys. The driver still holding the handle *l* now places his foot on the bell crank lever Q thereby moving the lever N away from the sliding frame so as to release the latter when the full power of the spring is exerted to move the sliding frame back to the position shown by red lines Fig. 1 in doing which the lower bar *e'* of the frame acts on the central pulleys D, D, and turns them with the axles and wheels in the direction of the arrow, the spring thus giving out the power it had previously absorbed and exerting this power to start the car.

An additional vertical spindle K with handle *l* may be connected to the opposite end of the car frame and made to communicate with the bell crank levers G, by devices similar to those above described, or their equivalents. An additional bell crank lever Q may be also situated at the opposite end of the car and made to communicate with a locking lever N so that the driver can operate the device from either end of the car.

Having now described the construction and operation of my invention I wish it to be understood that I do not claim broadly the employment in connection with railway cars of a spring or springs for absorbing the power required for stopping the car and subsequently delivering out that power to assist in starting the car, devices for accomplishing this end having been heretofore used. But

I claim as my invention and desire to secure by Letters Patent—

1. The sliding frame E with its V shaped ribs, the central pulleys or wheels D D having V shaped grooves and being secured to the axles of the car, the levers G G or their equivalent, and the spring M of the form represented or any other convenient form, the whole being arranged as and for the purpose herein set forth.

2. The locking lever N arranged in respect to the sliding frame as and for the purpose herein specified, and operated by the devices herein described or their equivalents.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

JOHN A. EMERICK.

Witnesses:

HENRY HOWSON,
JOHN WHITE.