

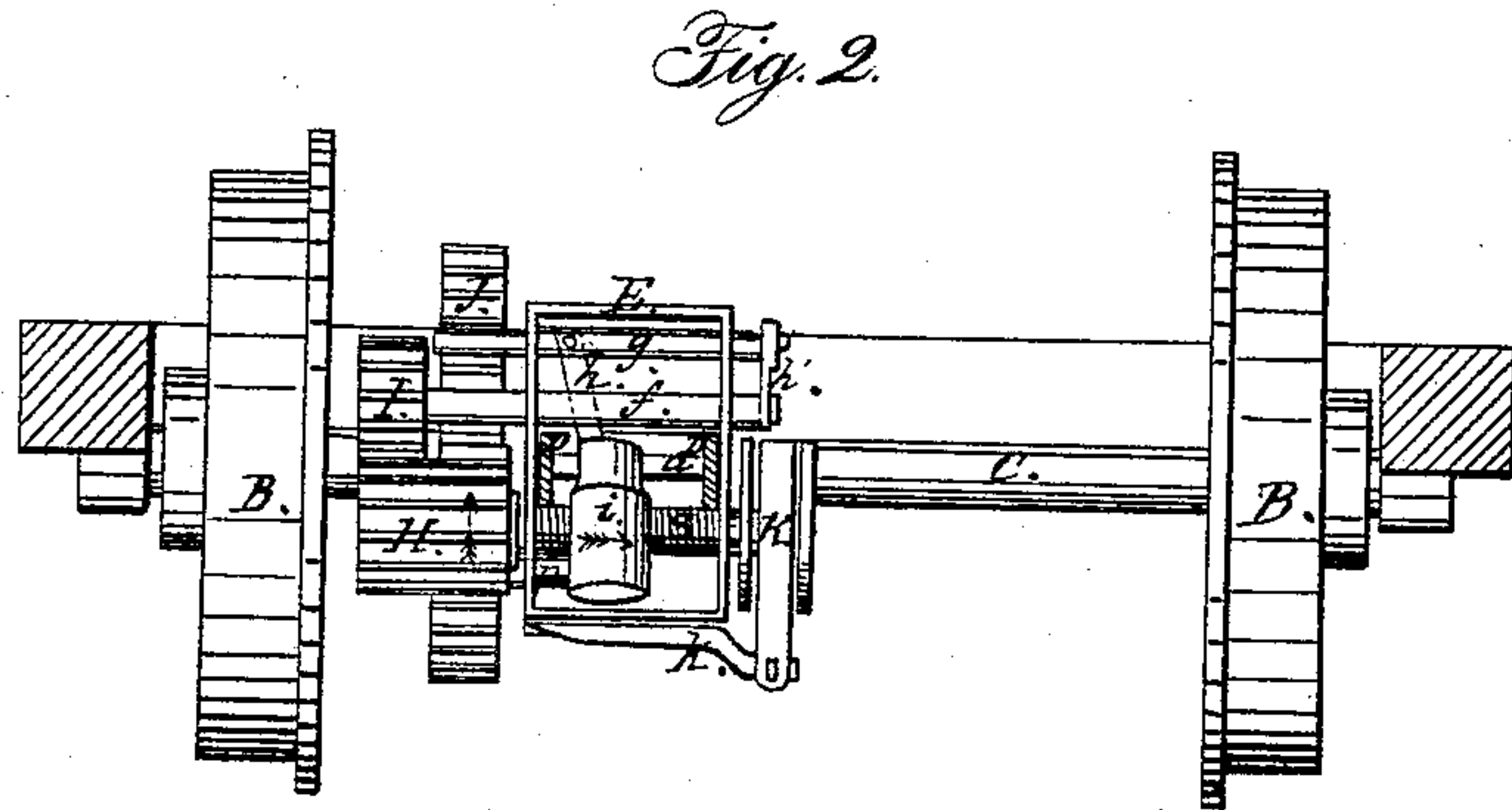
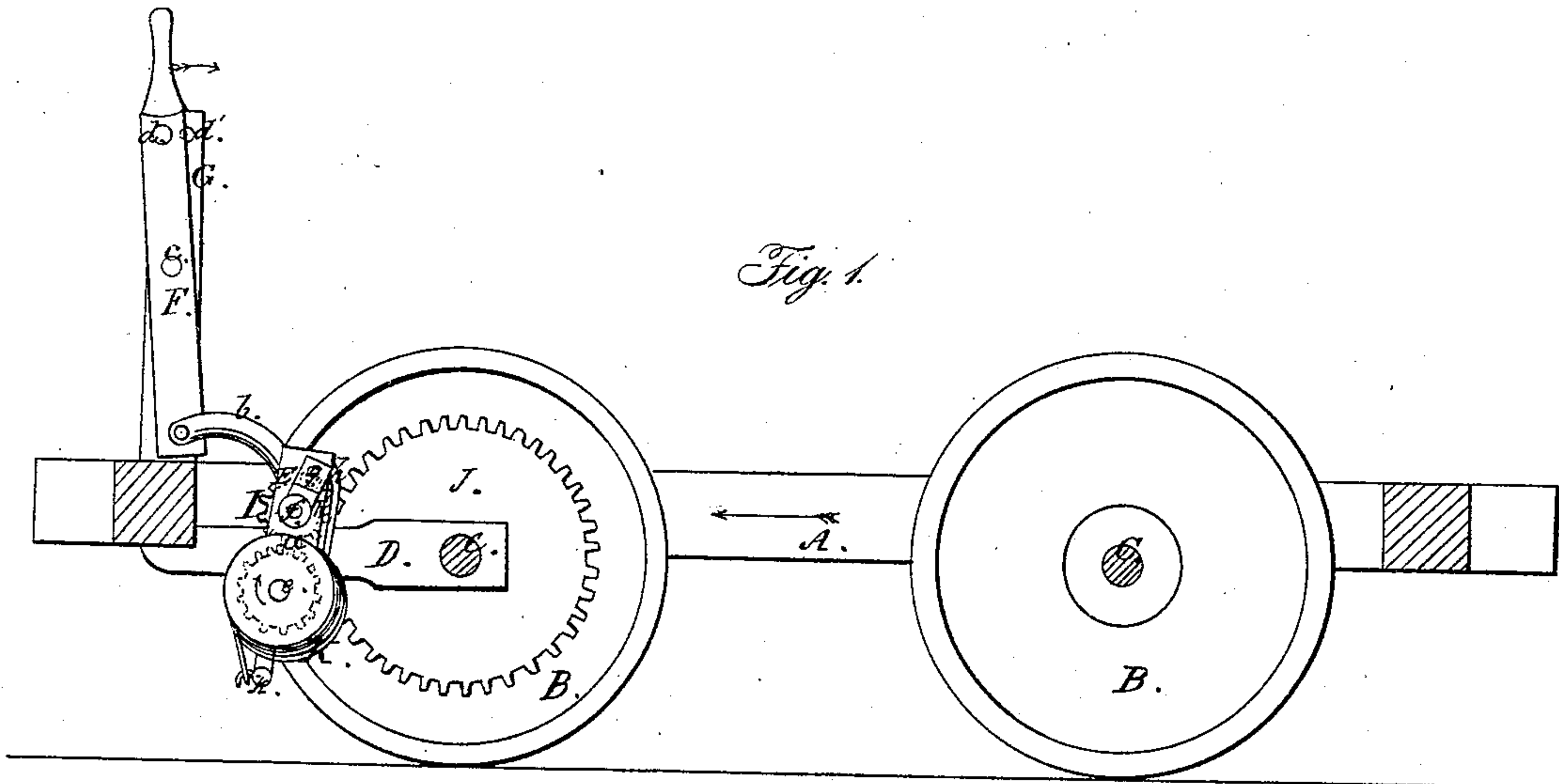
S. R. DIMOCK.

Car Starter.

2 Sheets—Sheet 1.

No. 37,088.

Patented Dec. 9, 1862.



Witnesses:

Timothy Shinn  
W. B. Partridge.

Inventor:

Sam<sup>l</sup> R. Dimock.

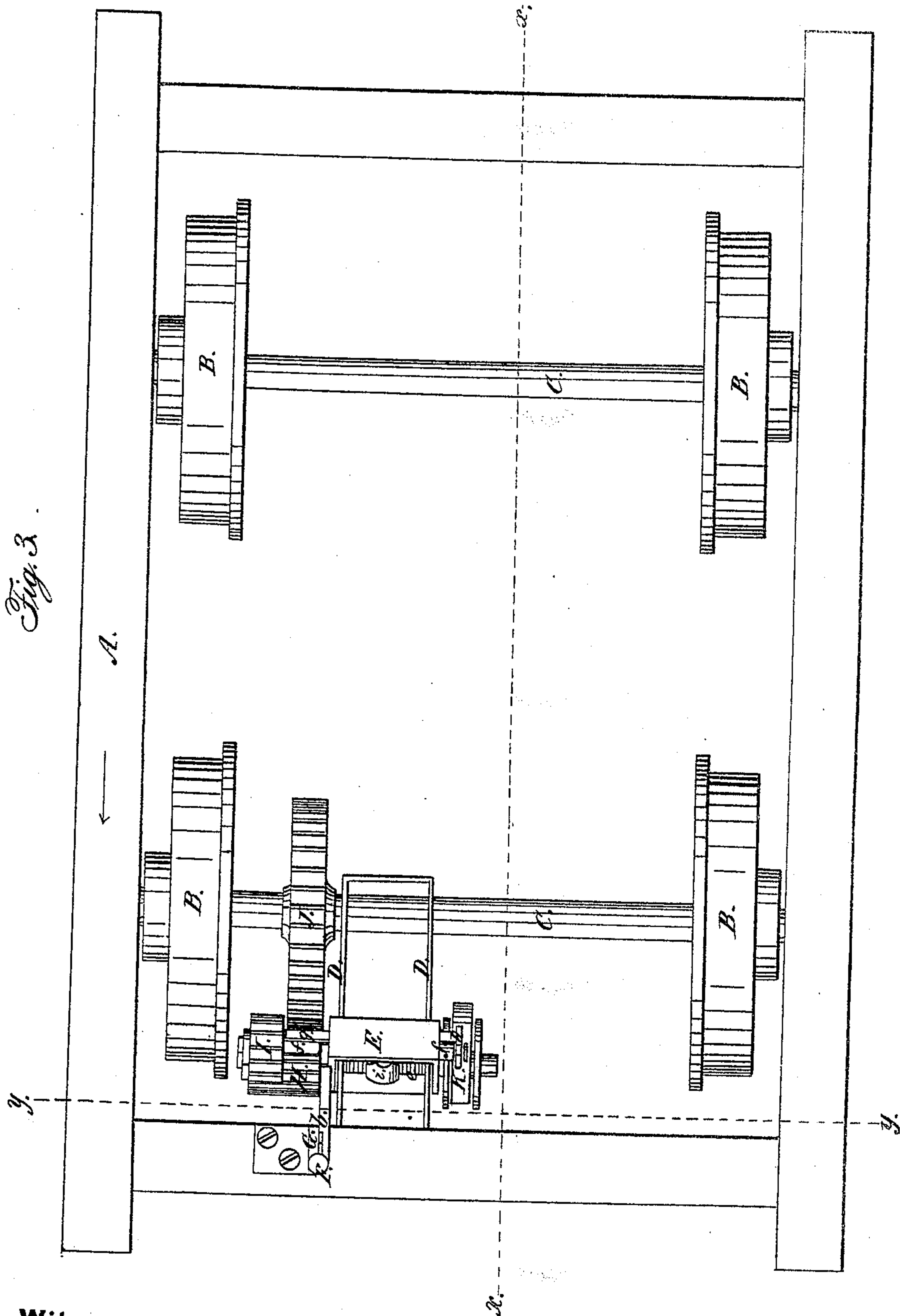
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# UNITED STATES PATENT OFFICE.

SAMUEL R. DIMOCK, OF PITTSFIELD, MASSACHUSETTS.

## IMPROVEMENT IN BRAKES FOR RAILROAD-CARS.

Specification forming part of Letters Patent No. 37,088, dated December 9, 1862.

*To all whom it may concern:*

Be it known that I, SAMUEL R. DIMOCK, of Pittsfield, in the county of Berkshire and State of Massachusetts, have invented a new and Improved Automatic Momentum-Brake for Railroad-Cars, &c.; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 represents a longitudinal vertical section of my invention, taken in the plane indicated by the line *x x*, Fig. 3. Fig. 2 is a transverse vertical section of the same, the line *y y*, Fig. 3, indicating the plane of section. Fig. 3 is a plan or top view of the same.

Similar letters of reference in the three views indicate corresponding parts.

The object of this invention is to accommodate the power which is exerted in stopping a car and use such power for the purpose of facilitating the operation of starting the same.

The invention consists in the arrangement of an oscillating frame carrying a spring and two pinions—one on a screw-shaft and the other on an arbor—to which a longitudinally-sliding motion is imparted by the action of said screw-shaft, in combination with a suitable hand-lever, and with a cog-wheel secured to the axle of the wheels of a railroad-car in such a manner that by the action of the hand-lever on the oscillating frame the first pinion, which is attached to the screw-shaft, can be thrown in gear with the cog-wheel on the axle, and, if the latter rotates by its action on the pinion, the spring is wound up and the rotary motion of the axle is stopped, and at the same time the second pinion is brought in such a position that it can be thrown in gear with the cog-wheel by the action of the hand-lever on the oscillating frame, and that the force of the spring is now exerted to propel the car in its original direction.

To enable those skilled in the art to make and use my invention, I will proceed to describe it with reference to the drawings.

A represents the frame or platform of a car, which is provided with four wheels, B, running on axles C in the ordinary manner.

D is two arms, which extend from the frame A and which rest on the axle C, leaving the same free to rotate, and these arms form the

bearings for the pivot or pivots *a*, on which the frame E oscillates. This frame is slipped on the arms D, and it connects by means of a rod, *b*, with a hand-lever, F, which vibrates on a pivot, *c*, and which is secured in the desired position by a pin, *d*, catching into holes *d'* in the standard G, to which said hand-lever is attached. The frame E forms the bearings for the screw-shaft *e*, which carries the pinion H, and also for the arbor *f*, which carries the pinion I. These two pinions are in gear with each other, and they are so arranged in relation to the fulcrum of the frame E that by imparting the said frame an oscillating motion either of to pinions can be thrown in gear with the cog-wheel J, which is firmly keyed to the axle C. The arbor *f* of the pinion I, however, is made long enough so that said pinion can be pushed beyond the cog-wheel J, as clearly shown in Figs. 2 and 3 of the drawings, and the face of the pinion H is of such a width that in whatever position the pinion I may be brought it continues to be in gear with the pinion H. The arbor *f* has a longitudinal sliding motion in the frame E, and its position is governed by a sliding rod, *g*, which connects with the same by a short arm, *h'*, and with the screw-shaft *e* by a forked arm, *h*, extending from a pin, *i*, which screws on the screw-shaft *e*, so that by rotating the pinion H in the direction of the arrow marked upon it in Fig. 2 the pin *i* travels in the direction of the arrow marked upon it in the same figure, and the pinion I is brought opposite the cog-wheel J, and by rotating the pinion H in the direction opposite the arrow marked upon it the pin *i* travels in the opposite direction, and the pinion I is moved out beyond the cog-wheel J.

K represents a coiled spring, one end of which is secured to the end of the screw-shaft *e* and its other end to an arm, *k*, extending from the under side of the frame E in such a manner that by turning the pinion H in the direction of the arrow marked upon it in Fig. 2 the spring is wound up, and if the spring is wound up it has a tendency to turn the pinion in the direction opposite to said arrow. As the spring K unwinds, the pin *i* travels in the direction opposite to the arrow marked upon it in Fig. 2, and when it has arrived in the position shown in said figure, a dog, *p*, which projects from said pin, is forced up against the side of the



pinion H, and by these means the spring is prevented unwinding any farther than desirable.

The operation is as follows: If the car moves in the direction of the arrow marked upon it in Figs. 1 and 3 of the drawings, and it is desired to stop the same or to apply the brake, the hand-lever F is thrown in the direction of the arrow marked near it in Fig. 1. By this operation the oscillating frame E is turned on its axis, and the pinion H is thrown in gear with the cog-wheel J. By the action of this cog-wheel the pinion rotates in the direction of the arrow marked upon it in Figs. 1 and 2, and thereby the spring K is wound up and at the same time the pin *i*, with the sliding shaft *f*, and pinion I are made to travel in the direction of the arrow marked upon said pin in Fig. 2. When the spring is fully wound up, the rotary motion of the wheels C, and with it the progress of the car, is stopped. If it is now desired to start the car, the hand-lever F is moved back to the position shown in Fig. 1, and thereby the pinion I, which by the motion of the pin *i* on the screw-shaft had been brought opposite the cog-wheel E, is thrown in gear with the same, and the spring K in its tendency to unwind exerts a strain on the cog-wheel J in the direction of the arrow marked upon it in Figs. 1 and 3. When the car begins to move, the pinion I is gradually moved back to its original position, and as soon as said pinion has traveled beyond the edge of the cog-wheel J, so that the power of the spring can have no farther influence on the progress of the car, the dog *p* presses against the side of the pinion H, and the spring K is prevented unwinding any farther. It will thus be seen that if the pinion H is in gear with the cog-wheel J, the power of the spring opposes the progress of the car, and, if the pinion I is in gear with the cog-wheel J, the power of the

spring facilitates said progress, and, if the momentum of the car should be so large that the spring winds up entirely before the car stops, the rotary motion of the axle C will be arrested and the wheels will slip on the track, so that the car is certain to stop in a short time. It must be remarked that the arbor *f* of the pinion I might also be made with a screw-thread screwing into the pin *i*, and thereby the rod *g* and its attachments could be dispensed with, and every revolution of the screw-shaft will then move the pinion I two threads instead of one.

—This device is very simple. It is not liable to get out of order. It is easily operated, and it can be attached with little trouble to any car, new or old. It works entirely independent of the up and down motion imparted to a car by the springs supporting the same.

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

1. The arrangement of the oscillating frame E, carrying the pinion H, with its screw-shaft *e* and spring K, and the pinion I, with the longitudinally-sliding arbor *f*, in combination with the cog-wheel J on the axle C of the wheels of a railroad-car, all constructed and operating substantially as and for the purpose herein shown and described.

2. The arrangement of the dog *p*, projecting from the pin *i* on the screw-shaft *e*, in combination with the pinion H and spring K, as described, for the purpose of preventing the spring from unwinding any farther than desirable.

SAMUEL R. DIMOCK.

Witnesses:

TIMOTHY SHINE,  
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