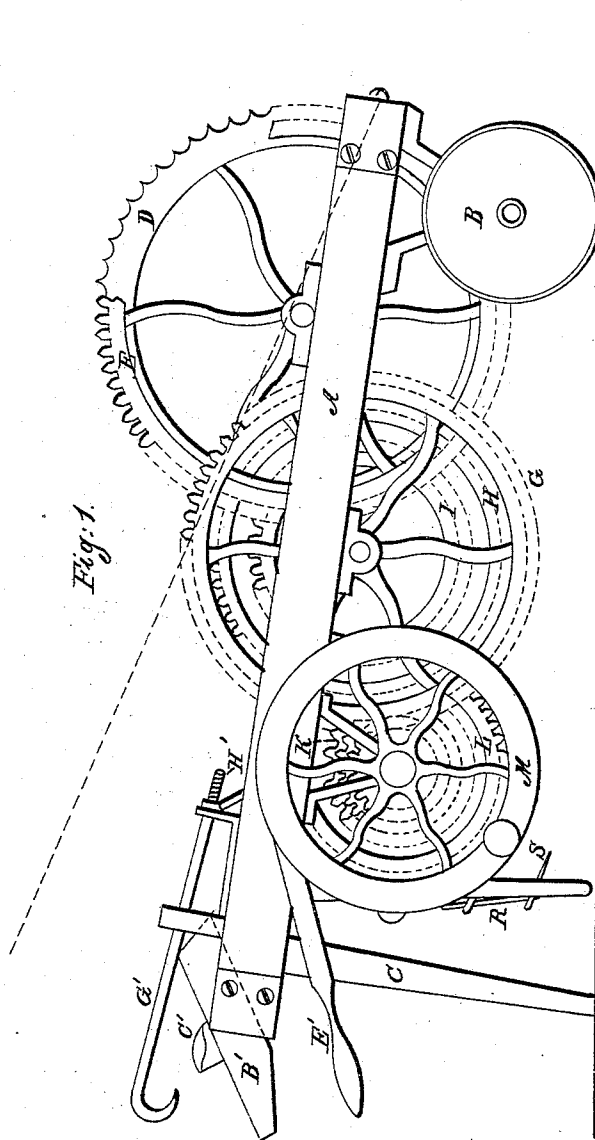


E. SPRINGER.
Car Propeller.

2 Sheets—Sheet 1.

No. 84,012.

Patented Nov. 10, 1868.



Witnesses.

E. E. Waite
K. Coon

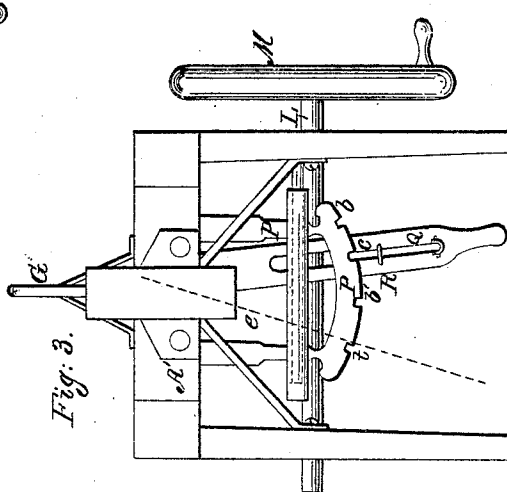
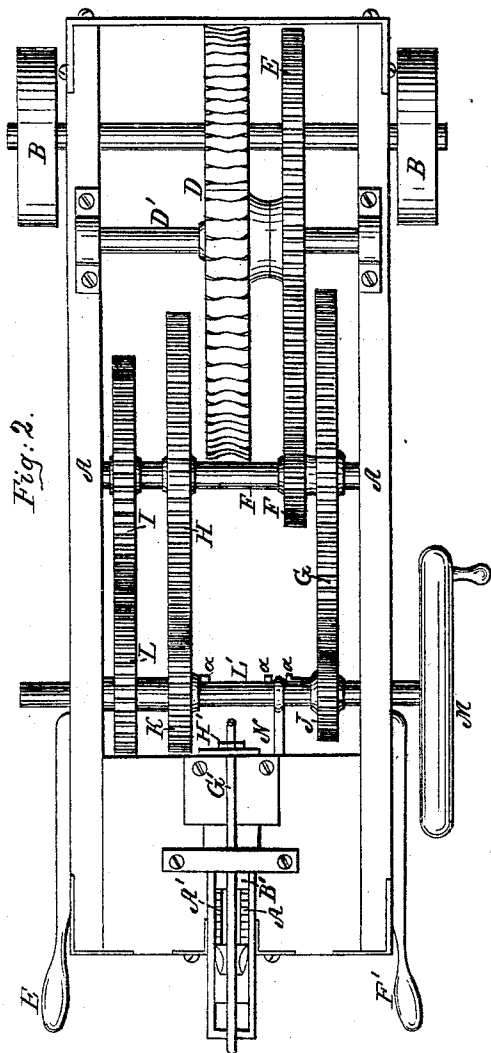
Inventor.

Ezra Springer

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Car Propeller.

No. 84,012.

Patented Nov. 10, 1868.



Witnesses.

E. E. Maile
K. Coon

Inventor.

Ezra Springer

United States Patent Office.

EZRA SPRINGER, OF DAVIS, ILLINOIS.

Letters Patent No. 84,012, dated November 10, 1868.

IMPROVED RAILWAY-CAR MOVER.

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, EZRA SPRINGER, of Davis, in the county of Stephenson, and State of Illinois, have invented a certain new and improved Railroad-Car Mover; and I do hereby declare that the following is a full and complete description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a side view of the machine.

Figure 2 is a view of the top.

Figure 3 is an end view.

Figure 4 is a detached section.

Like letters of reference refer to like parts in the several views.

This machine consists of an oblong square frame, A, fig. 2, one end of which is supported by a pair of wheels, B, whereas the opposite end is supported by the legs C.

In said frame is arranged a system of wheels, as follows: D, fig. 2, is a track-wheel, mounted upon the shaft D', the teeth of which are curving inward from the ends toward the centre, and are brought to a sharp edge, for the purpose of holding it to the rail, as will hereinafter be shown. Mounted upon the same shaft with the track-wheel is a large cog-wheel, E, and which is made to engage the small pinion F. On the shaft F' are transfer-wheels, G H I, which are put in engagement with the wheels J K L, secured to the shaft L', and by which all the aforesaid wheels are operated by the crank-wheel M, as will hereinafter be shown.

The arrangement and complication of wheels are for the multiplication of power and speed, whereby the track-wheel referred to shall be efficient in its application as the spring-mover of the machine.

The wheels J K L are not keyed to the shaft L', but are secured to the same by means of a sleeve, in which the shaft revolves, and to which the wheels are keyed. The sleeve and wheels are secured to the shaft by means of a feather sunk in the side of the shaft, and from which project the lugs a, fig. 2, which, as the feather is switched from side to side, slip into notches cut in the sleeves for their admission, for the purpose of operating the feather, and thereby throw the wheels in and out of gear.

N, fig. 2, is an arm, one end of which embraces the shaft and feather, between the lugs a, whereas the opposite end of said arm is attached to a slide, o, fig. 3, secured movably in a stay, P, and is pushed laterally backward and forward by the lever Q, said lever being retained in any one position by an adjustable rod, R, fig. 1, operated by the short lever or treadle S. The upper end of the rod is thrown into the notches b of the stay P by a spring, c, as shown in fig. 3.

A', fig. 2, is a pair of racks, placed parallel to each other, and secured in a case, B'. A detached view of one is shown in fig. 4.

C' is a slide-dog, a detached view of which is shown in fig. 5. Said dog is fitted to the racks, and moves therein between them, for a purpose hereinafter shown.

The position of the racks and dog in relation to and in connection with the machine is shown in fig. 1.

As above said, this machine is for pushing cars on a side-track, to or from warehouses, lumber-yards, mines, &c., where cars are required to be moved by hand or by the use of horses, during the absence of the engine, thereby dispensing with the labor of several men and the use of horses for moving the cars.

The practical application and operation of this machine are as follows:

The operator holds the machine by the handles E', and trundles it along on the track-wheels B (which are used only for this purpose) to the end of the car to be moved. The machine is then elevated, so as to bring the end of the car against the shoulder of the slide-dog C', which catches underneath the sill. The dog being movable, it can be easily adjusted to different-height cars.

In this position the machine is secured to the car by the hook G', which is made fast underneath the sill, and by means of the hand-nut H', the end of the car is drawn tight against the shoulder of the dog, thereby holding it firmly and securely in its connection.

The relative position of the machine to the car and road, when thus connected, is such as to bring the wheel D upon the rail, or on a plank laid upon the ties for that purpose. Now, on turning the crank-wheel M, motion is given to the track-wheel D, which, by its curved and sharp-edge teeth, will so engage the rail as to prevent slipping, and hence will roll along, thereby moving the car.

If the engagement of the wheels be such as represented in fig. 2, and in which J is the first or moving-wheel, and, as seen, engages the large wheel G, it will be obvious that the speed thereby obtained will not be great, in consequence of the great difference in the size of the wheels.

In order to obtain an increase of speed, the wheel J is disengaged from the wheel G, by pushing the lever Q in direction of the red line e, fig. 3, thereby moving the feather and the lugs a into the wheel K, and retaining it thus by the rod R in the notch b', and thus secure it to the shaft, the result of which will be an increase of speed, in consequence of the larger size of the wheels K and L.

The first engagement of the wheels is used on starting the cars, when greatest power is required, but when the car is in motion its speed is increased by shifting the engagements of the wheels, as above described.

The still further increase of speed will be obtained on pushing the arm Q, so that the rod R will be received by the notch t, the result of which will be to secure the wheel L to the shaft by means of the feather and lug a, thereby disengaging the wheels K from the shaft, hence will not act upon the wheel H, the wheel L now being the first mover, which, by its large size,

will put the machine in full motion, as fast as the operator at the wheel M can walk.

The drive-wheel D is so connected to the large wheel E, by means of a spring-reaction coupling, that in running down grades it will run independent of the rest of the machine, and hence there will be no drive-wheel upon the rail, in consequence of the machine and car moving faster than the wheel.

As above said, the track-wheels B are simply for the purpose of moving the machine, and from which it may be moved easily from place to place,

Before the machine is attached to the car, it is turned over, so that the truck-wheels B, and the shaft to which they are keyed, will be at the top, thereby allowing the track-wheel D to come upon the rail.

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

1. The driving-wheel D, in combination with the driving-gears, arranged and operating conjointly, as and for the purpose substantially as specified.

2. The lever Q, rod R, and stay P, in combination with the arm N, feather-keys, and shifting-gears, applied to the purpose set forth.

3. The racks A', sliding dog C', in combination, arranged in the manner and for the purpose set forth.

EZRA SPRINGER.

Witnesses:

H. H. BOWKER,
W. POTTER.