J. WOOLF.

Improvement in Propelling Apparatus for Land Conveyances.

No. 116,130. Patented June 20, 1871.

FIG. 1.

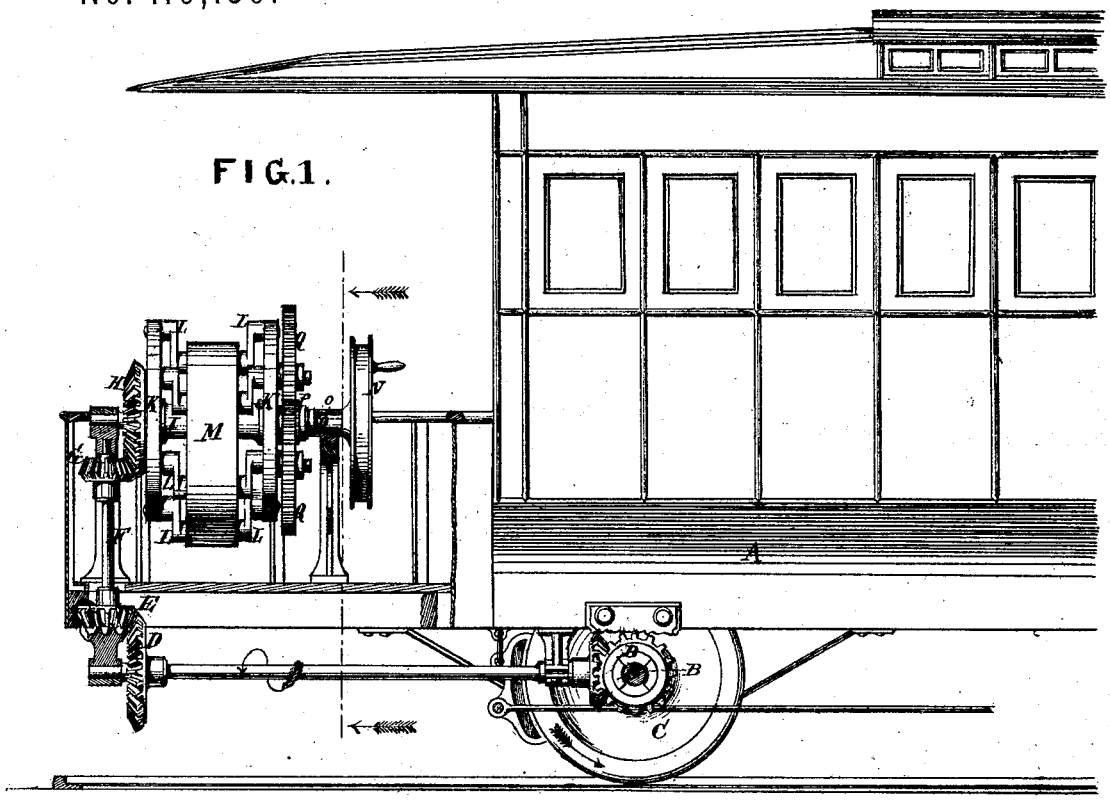
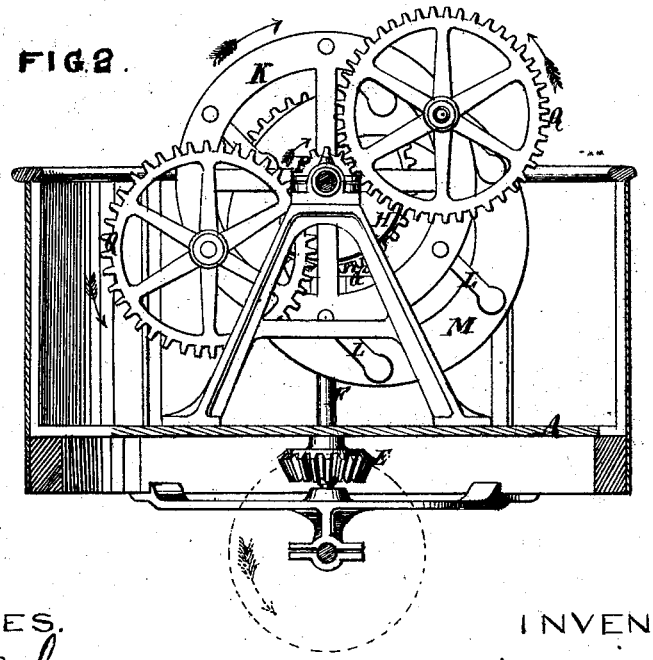


FIG. 2.



WITNESSES.

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JACOB WOOLF, OF BURR OAK, MICHIGAN.

IMPROVEMENT IN PROPELLING APPARATUS FOR LAND-CONVEYANCES.

Specification forming part of Letters Patent No. 116,130, dated June 20, 1871; antedated June 7, 1871.

To all whom it may concern:

Be it known that I, JACOB WOOLF, of Burr Oak, in the county of St. Joseph and State of Michigan, have invented a new and Improved Apparatus for Starting and Propelling Cars, of which the following is a specification:

Nature and Objects of the Invention.

My apparatus is constructed with one or more eccentric annular weights, connected by crank-arms with wheels attached to a driving-shaft, one or more of the shafts of said connecting-cranks being connected by suitable gearing with an operating crank-wheel or lever of any form, by means of which said cranks may be turned to elevate the eccentric weight, so that its gravity may be utilized to turn the driving-shaft, from which motion is communicated to the axle of the car.

Description of the Accompanying Drawing.

Figure 1 is a side view of the apparatus in a state of rest. Fig. 2 is a rear elevation, showing the annular weight elevated to transmit motion to the car. Fig. 3 is a longitudinal section at *x x*, Fig. 1.

General Description.

A represents a car-truck supported on axles B and wheels C. Upon one of the axles is a gear-wheel, D, meshing with a pinion, E, on a vertical shaft, F, upon the upper end of which is another gear-wheel, G, meshing with a wheel, H, on a horizontal shaft, I, having its bearing in standards J J. To the shaft I are rigidly secured one or more wheels, K, in the rims of which are pivoted a number of cranks, L, supporting on their wrists an annular weight, M, so that said weight will be eccentric to the wheels K by the length of the crank-arms, and, if the cranks be turned upon their axes, the weight will thereby be elevated on one side or the other of the centers of the wheels, and the gravity of the weight will thereby act to turn the wheels in one or the other direction. To rotate the cranks in this manner for the purpose of elevating the weight I employ a crank-wheel or levers, of any suitable form, as shown at N, attached to a sleeve, O, having its bearings around one end or journal of the shaft I, and communicating, through a pinion, P, with cog-wheels Q on one, two, or more of the crank-shafts; or, if preferred, intermediate wheels may be interposed between the pinion P and wheels Q; or belting may be used, applied directly to either of the wheels. The double or concentric shafts I and O afford convenient means for attaching any prime mover which is to be placed in connection with the elevating-cranks L, and also to give an end bearing to the shaft I.

Operation.

When a car to which the invention is applied is at rest and is to be started, a sufficient motion is imparted to the cranks to elevate the weight to the necessary extent. If the car be light, a very slight movement will suffice; but if it be heavy, a further motion will impart greater eccentricity and effective leverage to the weight, so as to produce any force required. If the car is to be backed, a reverse movement of the apparatus will produce this effect; or the movement last named, while the car is in motion, will cause the apparatus to act as an effective brake to stop the car when desired.

I do not claim, herein, the eccentric annular weight and the elevating-cranks, because the same are contained in patents heretofore granted to me.

The following is what I claim as my invention:

1. In combination with the eccentric annular weight M and elevating-cranks L, one or more planet-wheels, which turn the said elevating-cranks by their axial rotation, and have an orbital revolution around the central wheel and shaft, as explained.

2. The concentric shafts I and O, in combination with the eccentric annular weight M, elevating-cranks L, and connecting or planet-wheels, as represented and described.

Witnesses: JACOB WOOLF.

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WM. H. BRERETON, Jr.