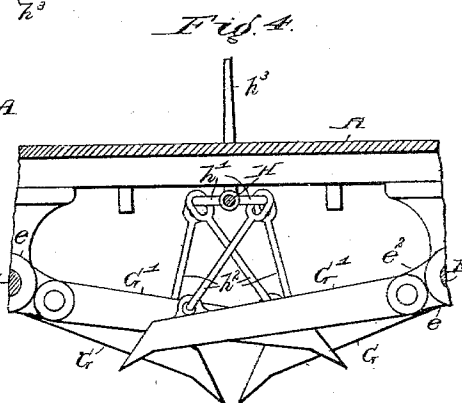
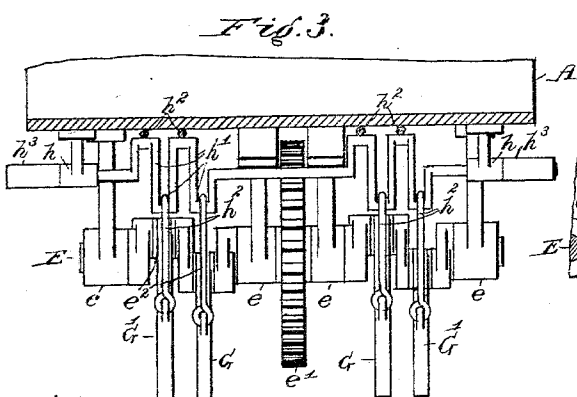
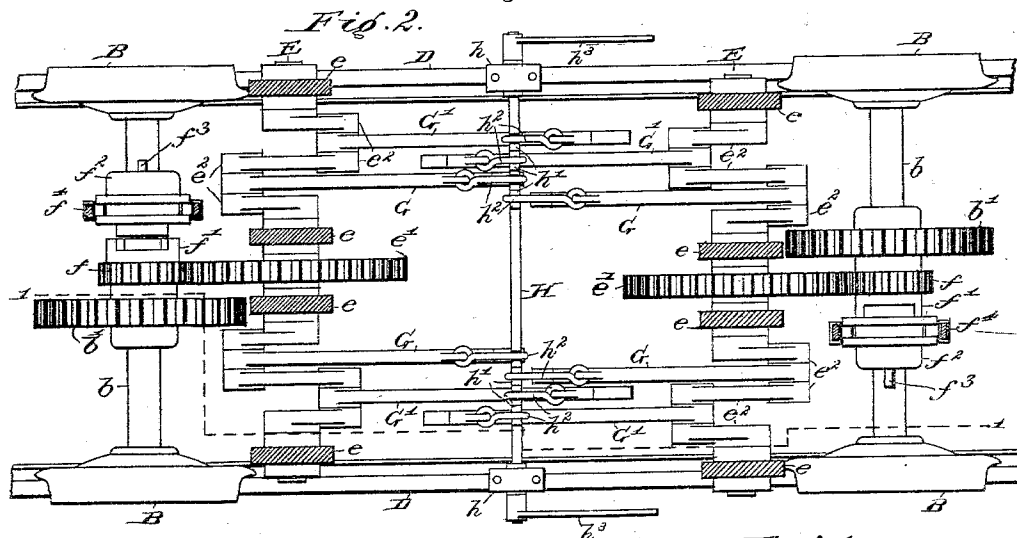
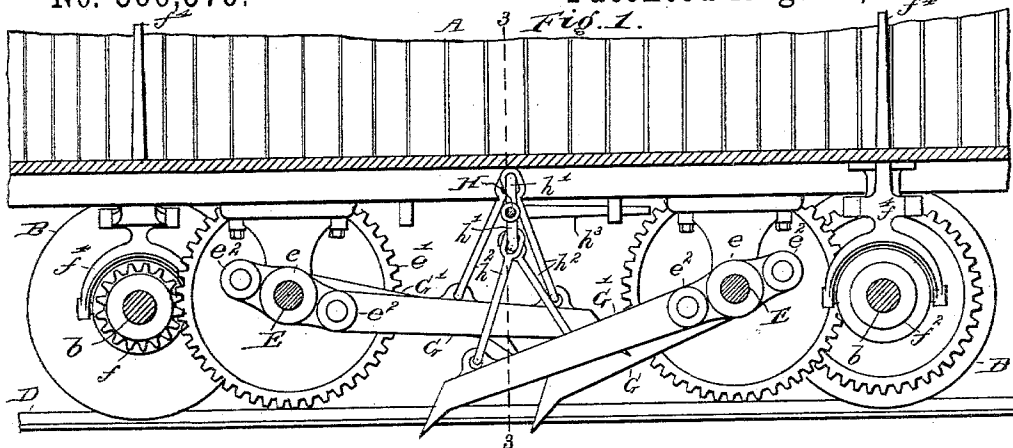


(No Model.)

F. L'HEUREUX & G. A. FANEUF.
DEVICE FOR PROPELLING WHEELED VEHICLES.

No. 566,579.

Patented Aug. 25, 1896.



Witnesses.

Kirkley Hyde.

Grace E. Hibbard.

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Francois L. Heuneux,
 & George A. Kaneuf,
 By Albert M. Moore,
 Their Attorney

UNITED STATES PATENT OFFICE.

FRANÇOIS L'HEUREUX, OF DRACUT, AND GEORGE A. FANEUF, OF
LOWELL, MASSACHUSETTS.

DEVICE FOR PROPELLING WHEELED VEHICLES.

SPECIFICATION forming part of Letters Patent No. 566,579, dated August 25, 1896.

Application filed October 26, 1895. Serial No. 566,990. (No model.)

To all whom it may concern:

Be it known that we, FRANÇOIS L'HEUREUX, residing at Dracut, and GEORGE A. FANEUF, residing at Lowell, county of Middlesex, Commonwealth of Massachusetts, citizens of the United States, have invented a certain new and useful Improvement in Devices for Propelling Wheeled Vehicles, of which the following is a specification.

Our invention relates to devices for propelling wheeled vehicles, such as are driven by motors carried by said vehicles, and said devices are applicable to steam traction-engines for drawing a gang of plows or heavy loads or to locomotive snow-plows for railways, especially to snow-plows for electric street-railways. These last-named plows are commonly driven by electric motors, one to each axle, and where the snow is deep or has become a sort of frozen slush the snow is frequently compacted into a hill of ice, curved to fit the front of the wheel in such a manner as to stop the plow, although the bottom of the wheel-tread is in contact with the rail and the wheels will revolve. In such cases the ice will frequently be broken by the weight of the plow if the plow can be made to advance. It frequently is necessary to reverse the movement of such a plow sometimes against obstructing ice and snow. We therefore use, in addition to the driving-wheels, pushers or legs which may engage with the ground and are given a reciprocating movement by the rotation of the driving-wheels.

The object of our invention is to enable these pushers to be thrown into and out of action at will and thereby to save the power necessary to operate them when their use is unnecessary, to provide means whereby with oppositely-acting sets of pushers one set may be brought into action and the other set out of action simultaneously, and to reverse the movement of the plow or other vehicle to which they are applied.

Said invention consists in the devices and combinations hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a vertical longitudinal section on the line 1 1 in Fig. 2 of a car standing on a track and suitable for a plow to be used on an electric street-railway, showing our improved devices applied

thereto, with the right-hand set of pushers in operative position; Fig. 2, a plan of the truck of the said car standing on a track and provided with our improvement, the position of the pushers being the same as in Fig. 1; Fig. 3, a vertical cross-section of said car and improvement on the line 3 3 in Fig. 1, but showing the pushers at the right of said Fig. 1 and their operating devices in full and omitting entirely the pushers at the left of said Fig. 1 and omitting also the car-supporting wheels and rails; Fig. 4, a section in the same plane as Fig. 1, but showing both sets of pushers out of operative position.

In the drawings the body A, flanged supporting-wheels B on rails D, gears b' , fast on the axles b and driven by motor, (not shown,) are all of the usual construction and operation and may be used with the usual plowing devices. (Not shown.)

The cranked shafts E are supported in hangers e , secured to the body A and provided with gears e' , fast thereon and engaged by pinions f , loose on the axles b and having hubs f'' , which are clutch counterparts, the other clutch counterparts f^2 being moved on splines f^3 on the axles b by levers f^4 in an obvious manner to open or close the clutches, one clutch being open when the other is closed.

On the cranks e^2 of the shafts E are hung pawl-shaped pushers G G', there being an even number of pushers (four being shown on each shaft E) on a shaft E, arranged to act alternately in pairs, the pushers of the same pair being arranged at equal distances from the middle of the car-body or plow. These pushers engage the ground and propel the car when the wheels are obstructed by accumulations of snow or ice in front of them, such accumulations frequently making it impossible to propel the car when the wheels B revolve in the usual and proper manner. A rock-shaft H is supported in suitable hangers h between the two crank-shafts and is provided with cranks h' or radial arms, which are connected by connecting-rods h^2 to the pushers in such a manner that by turning a suitable handle h^3 , with which the shaft H is provided, into a certain position all the pushers will be lifted out of engagement with the ground, as shown in Fig. 4, where the handle h^3 is represented as vertical. By turning the

handle h^3 into a horizontal position the free ends of the set of pushers nearest the handle will be dropped sufficiently to engage the ground, and the other set of pushers will be lifted still higher from the ground, as shown in Fig. 1. Two separate lifting-shafts may be used where, owing to the length of the car, it is thought advisable to separate the pushers.

We claim as our invention—

1. The combination of the driving-wheels, the axles, a pusher-shaft driven at a reduced rate of speed from one of said axles and having cranks, pushers, hung on said cranks and adapted to engage the ground and reciprocated by the rotation of said shafts, a lifting-shaft, having arms, links, connecting said pushers near their free ends to the free ends of said arms, and means of rotating said lifting-shaft, to raise said pushers out of such engagement or to lower said pushers, to permit of such engagement, as and for the purpose specified.

2. The combination of the driving-wheels, their axles, the pusher-shafts, driven from said axles and having cranks, two sets of oppositely-extending pushers, adapted to engage the ground, the pushers of each set being hung on the cranks of one of said pusher-shafts, a lifting-shaft, having oppositely-extending sets of arms, links connecting the

arms of one set to the pushers of the corresponding set, said lifting-shaft, being arranged and adapted to be turned to raise the pushers of either set out of such engagement while simultaneously lowering the pushers of the other set into such engagement, or, at will, to raise all of said pushers of both sets out of such engagement, as and for the purpose specified.

3. The combination of a driving-axle, a pinion, turning thereon but longitudinally immovable thereon, and forming one counterpart of a clutch, the other counterpart of said clutch, rotary with said shaft and sliding thereon, a lever, to move said last-named counterpart to close said clutch, a pusher-shaft having cranks, a gear fast on said pusher-shaft and in engagement with said pinion, and pushers, each hung at one end on one of said cranks and at the other end adapted to engage the ground, as and for the purpose specified.

In witness whereof we have signed this specification, in the presence of two attesting witnesses, this 22d day of October, A. D. 1895.

FRANÇOIS L'HEUREUX.
GEORGE A. FANEUF.

Witnesses:

ALBERT M. MOORE,
EMMA M. FANEUF.