I. B. DAVIS.

CAR PROPELLER.

No. 186,035. Patented Jan. 9, 1877.

Fig. 1.

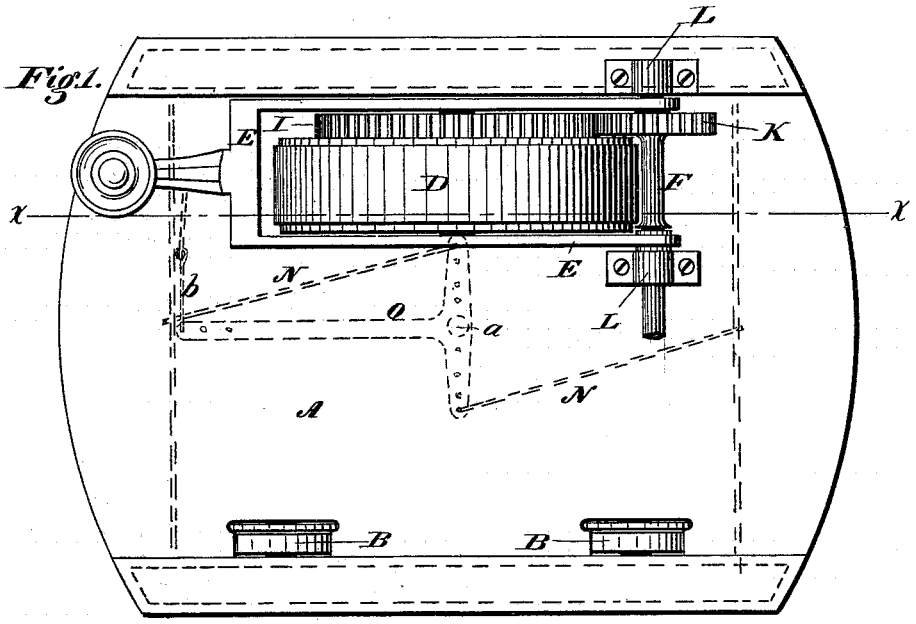
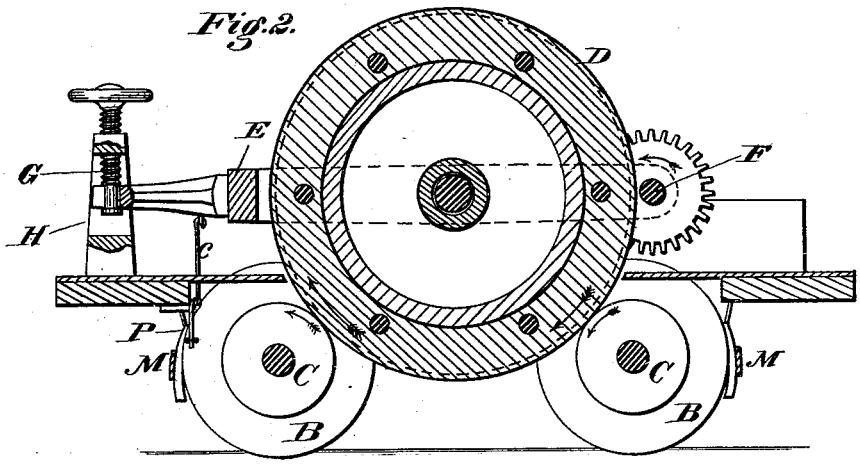


Fig. 2.



Witnesses:

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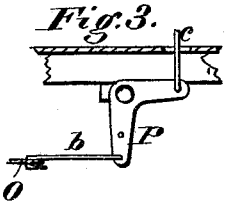
Fig. 3.



Inventor:

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By his attys.

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UNITED STATES PATENT OFFICE.

ISAAC B. DAVIS, OF HARTFORD, CONNECTICUT.

IMPROVEMENT IN CAR-PROPELLERS.

Specification forming part of Letters Patent No. **186,035**, dated January 9, 1877; application filed December 4, 1876.

To all whom it may concern:

Be it known that I, ISAAC B. DAVIS, of Hartford, in the county of Hartford, and State of Connecticut, have invented certain Improvements in Self-Propelling Cars, of which the following is a specification:

My invention consists in connecting the engine and the car-wheels by a peculiar arrangement of frictional gearing, which admits of the engine being thrown into and out of connection noiselessly and gradually; and in connecting the gear-shifting mechanism with the brake in such manner that throwing the engine out of action serves to apply the brakes, and vice versa.

Figure 1 represents a top-plan view of a car-platform provided with my improvements; Fig. 2, a longitudinal vertical section of the same on the line *x x;* Fig. 3, a detail view, illustrating the manner in which the brake is operated.

A represents the platform or frame of the car, supported by four wheels, B, which are secured rigidly upon axles having their ends mounted in bearings on the frame, as usual. C C represent friction-pulleys, mounted one on each of the car-axles, and secured rigidly thereto. D represents a frictional driving-drum, mounted in a frame or yoke, E, which latter is hinged at one end on a horizontal shaft, F, and connected at the other to a hand-screw, G, mounted in a pillar or standard, H, as shown, so that by turning the screw the drum may be raised from the pulleys C, or forced down thereon with any required degree of pressure. I represents a gear-wheel, secured to the side of the drum D, and engaging with a driving-pinion, K, which is secured upon the shaft F, as shown.

The shaft F, from which the propelling power is derived, will be the crank-shaft or the pulley-shaft of the engine or other motor, which will ordinarily remain in constant motion when the car is in use upon the road. M M represent the brake-shoes, suspended below the platform, and arranged to bear upon the faces of the wheels, as usual, and connected by rods N with a T-shaped lever, O, which latter is pivoted to the under side of the car-frame, and connected, as shown in Figs. 1, 2, and 3, by rods *b c* and an elbow-lever, P, to the movable end of the yoke or frame E, so that as the frame is elevated to raise the driving-drum from the pulleys C, the brakes are caused to bear upon the car-wheels, and that as the drum is lowered upon the pulleys the brakes are released.

When the car is in use upon the road, the engine and its driving-shaft F may be kept constantly in motion. When the car is to be started, the attendant simply turns the hand-screw G, the effect of which is to depress the yoke E and release the brakes, and at the same time press the drum D, which remains in constant motion, gradually upon the pulleys, so that, taking a gradually-increasing hold thereon, it starts the car easily and without noise. When the car is to be stopped the screw is simply turned in the opposite direction, and the drum D thereby raised from the pulleys, and the brakes applied to the wheels.

It will thus be seen that by the use of one hand to operate the screw G, the attendant is given complete control of the car, and enabled to stop and start the same at will without stopping and starting the engine, and that the movement of the car is effected gradually, easily, and without shock or strain upon any of the parts.

I am aware that the use of frictional gearing is common for many purposes; but in the combination shown it is both new and useful, and produces results hitherto unattained in self-propelling cars.

I am aware that it has been proposed to use frictional driving-gear for dummy-engines in a manner requiring the engine and boiler to be mounted on a rocking or tilting platform, in order to throw the gear into and out of action; but my arrangement permits the driving mechanism to be mounted rigidly on the car, and overcomes the difficulties and inconveniences incident to the use of the tilting platform.

Having thus described my invention, what I claim is—

1. In a self-propelling car, the combination of the friction-pulley C, secured upon the car-axle, the driving-shaft F, mounted in stationary bearings, and provided with the pinion K, and the swinging frame E, journaled upon

the shaft F, and driven by the pinion, as shown and described, and for the purposes set forth.

2. In combination with a friction-pulley, C, mounted on the car-axle, the driving-drum D, hinged frame E, and screw C, substantially as shown.

3. In a self-propelling car, the combination of the pulley C on the car-axle, the driving-drum D, the brake-shoes M, and mechanism, substantially such as shown, for releasing the brakes as the drum is thrown into action on the pulleys, and vice versa.

ISAAC B. DAVIS.

Witnesses:
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