

Joseph F. Stokes

Improvement in  
Rail-way

Self Propelling  
Car.

PATENTED JUN 27 1871

116508

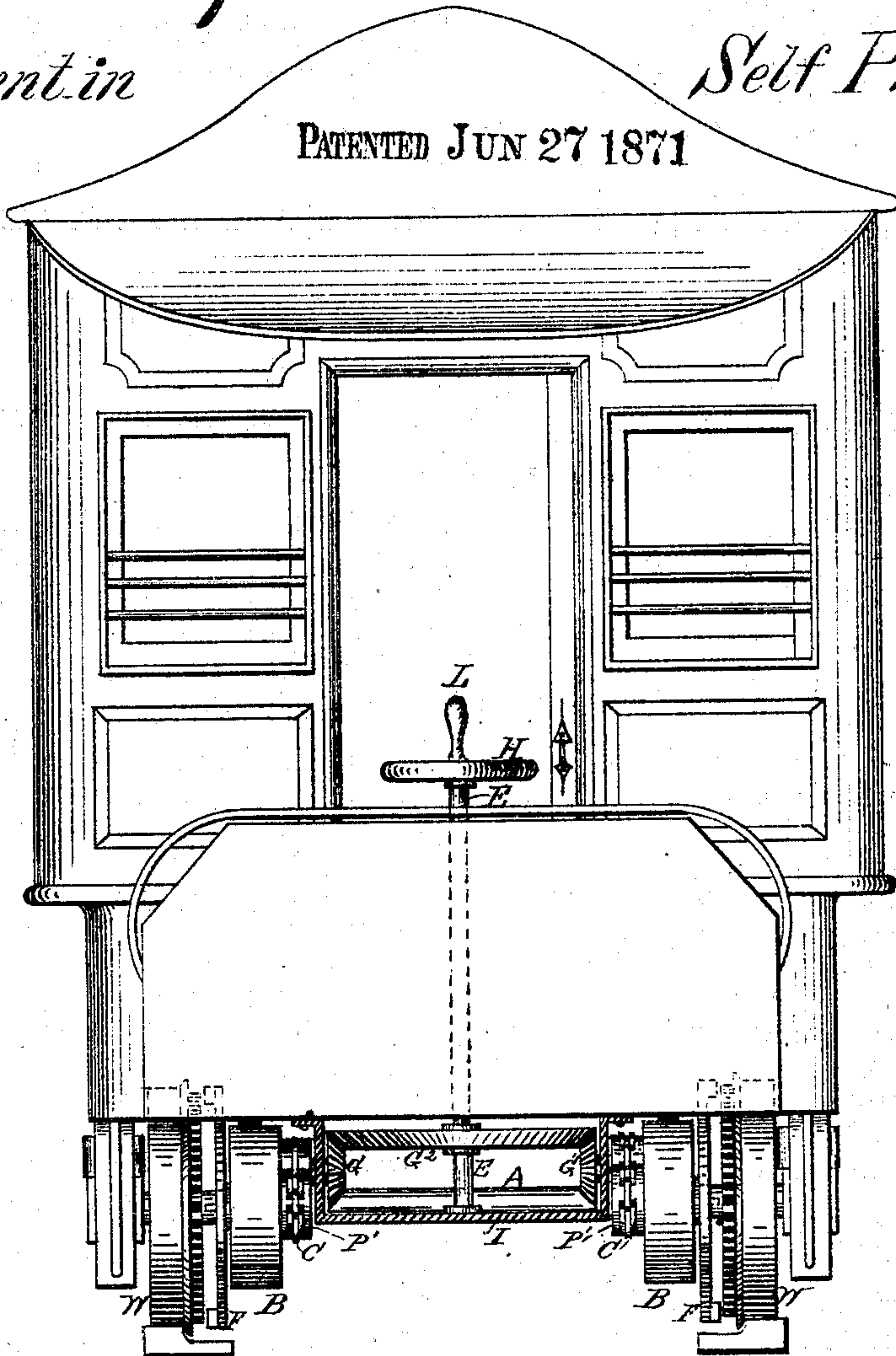


Fig. 1.

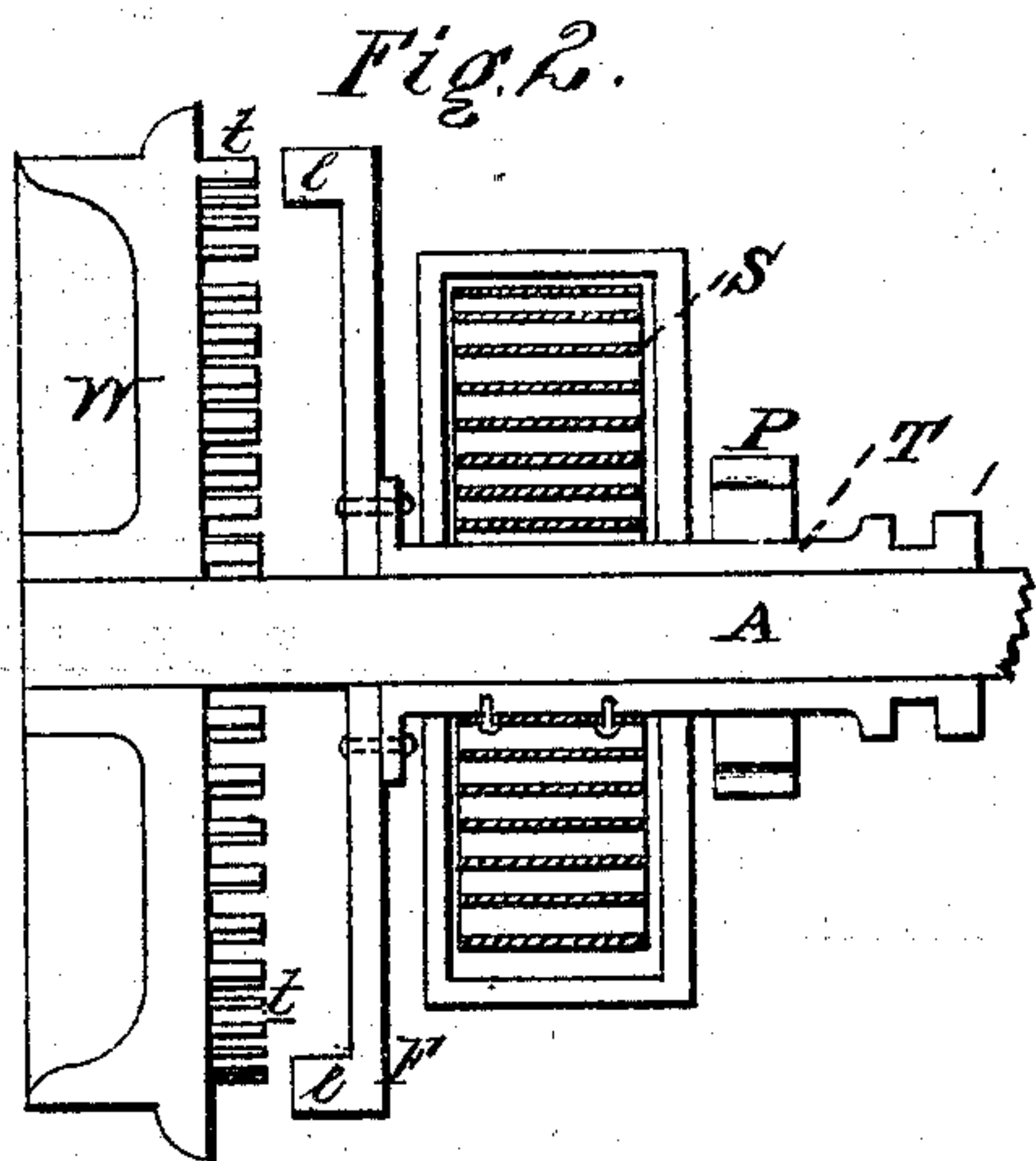


Fig. 2.

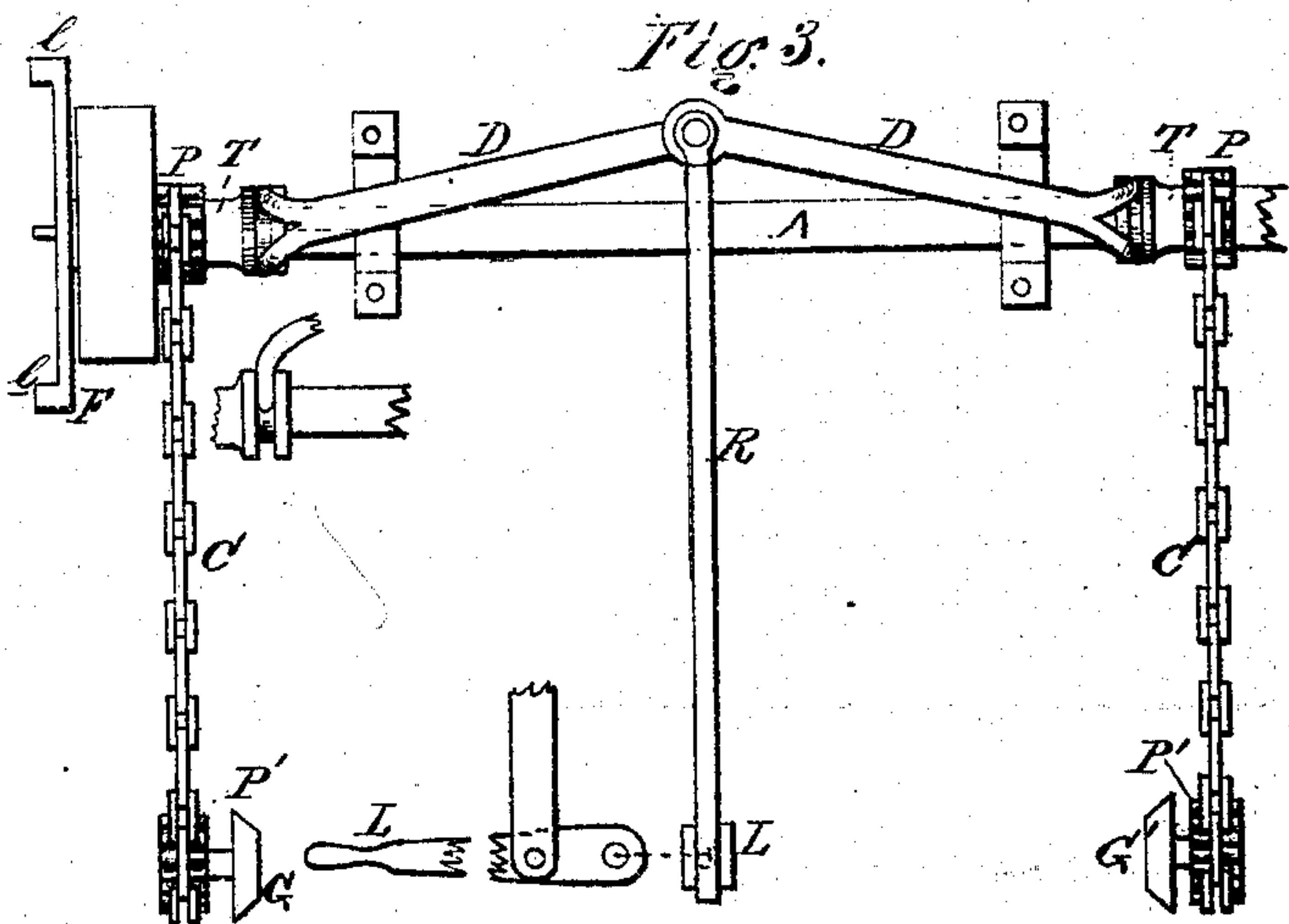


Fig. 3.

Witnesses.

Christian Burger  
Isaac R. Oakford.

Inventor.

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# UNITED STATES PATENT OFFICE.

JOSEPH F. STOKES, OF PHILADELPHIA, PENNSYLVANIA.

## IMPROVEMENT IN CAR-STARTERS.

Specification forming part of Letters Patent No. 116,508, dated June 27, 1871.

*To all whom it may concern:*

Be it known that I, JOSEPH F. STOKES, of the city and county of Philadelphia and State of Pennsylvania, have invented a certain Improvement in Self-Propelling Railway Car, of which the following is a specification:

This invention relates to an improvement on the self-propelling car patented by me under date of April 6, 1869, in which the motive-power, consisting of coiled springs applied to the axles, will revolve the wheels (while the springs are expanding) with sufficient velocity to propel the car at a suitable rate of speed; and it consists in the devices for operating such mechanism, as hereinafter fully described.

Figure 1 is an end view of a railway car, showing my invention applied. Fig. 2 is a detached and sectional view through the axle, one wheel and spring, enlarged. Fig. 3 is a plan-view of the mechanism for winding up the springs and for shifting the drums.

The drums B B, in which are inserted the coiled springs, are placed on the front and rear axles of the car, and in the position as shown at Fig. 1. The mechanism for winding the springs and for shifting the drums is operated from the platform. The tubes T T, Figs. 2 and 3, are made to encircle the axle A at a suitable distance from the ends. Each tube has attached to it a coiled spring, S, Fig. 2, which is wound up through chain-pulleys P P, secured to and revolving the said tube. By means of endless chains C C, passed over the pulleys P P and P' P', Fig. 3, and the bevel-gearing G, G<sup>1</sup>, and G<sup>2</sup>, connected therewith, a simultaneous movement of both tubes is produced when power is applied to the hand-wheel H. The tubes T T have each secured at one end circular flanges F F provided with projecting lugs *ll*, which engage with teeth *tt* formed on the back part of the car-wheels W W. The

opposite extremities of the tubes are somewhat enlarged, in which are formed annular recesses to accommodate the forked ends of the jointed rods D D. The said rods are connected, by a rod, R, to a lever, L, which extends the proper height above the platform of the car. The pulleys P' P', over which are passed the chains C C, have attached to them the bevel-pinions G and G<sup>1</sup>, the teeth of which play into the teeth of the bevel-wheel G<sup>2</sup>. This wheel receives its motion through an upright shaft, E, from the hand-wheel H. An iron frame, I, secured to the bottom of the platform, serves as a support for the shaft E and pinions G and G<sup>1</sup>. The rods D D, when they are extended to their full length (through the lever L) on a line with the axle A, will project the tubes, carrying with them the flanges F F toward the car-wheels, thus engaging the lugs *ll* with the teeth formed on the back part of the wheels W W. The coiled springs, which have been previously wound up through the hand-wheel H, are now released, and in expanding will exert their force directly on the wheels. The drums B B are centered loosely on the tubes T T, and are permitted to slide in and out, without revolving, by means of guides, which embrace a rail placed directly over the axle.

I claim as my invention—

The combination of the drums B B, tubes T T, coiled springs S, flanges F F, chain-pulleys P P and P' P', endless chains C C, bevel-gearing G, G<sup>1</sup>, and G<sup>2</sup>, shaft E, and hand-wheel H, all arranged and operating in conjunction with the teeth *tt* of the car-wheels W W, as and for the purpose herein specified.

JOSEPH F. STOKES.

Witnesses:

ISAAC R. OAKFORD,  
CHRISTIAN BERGER.