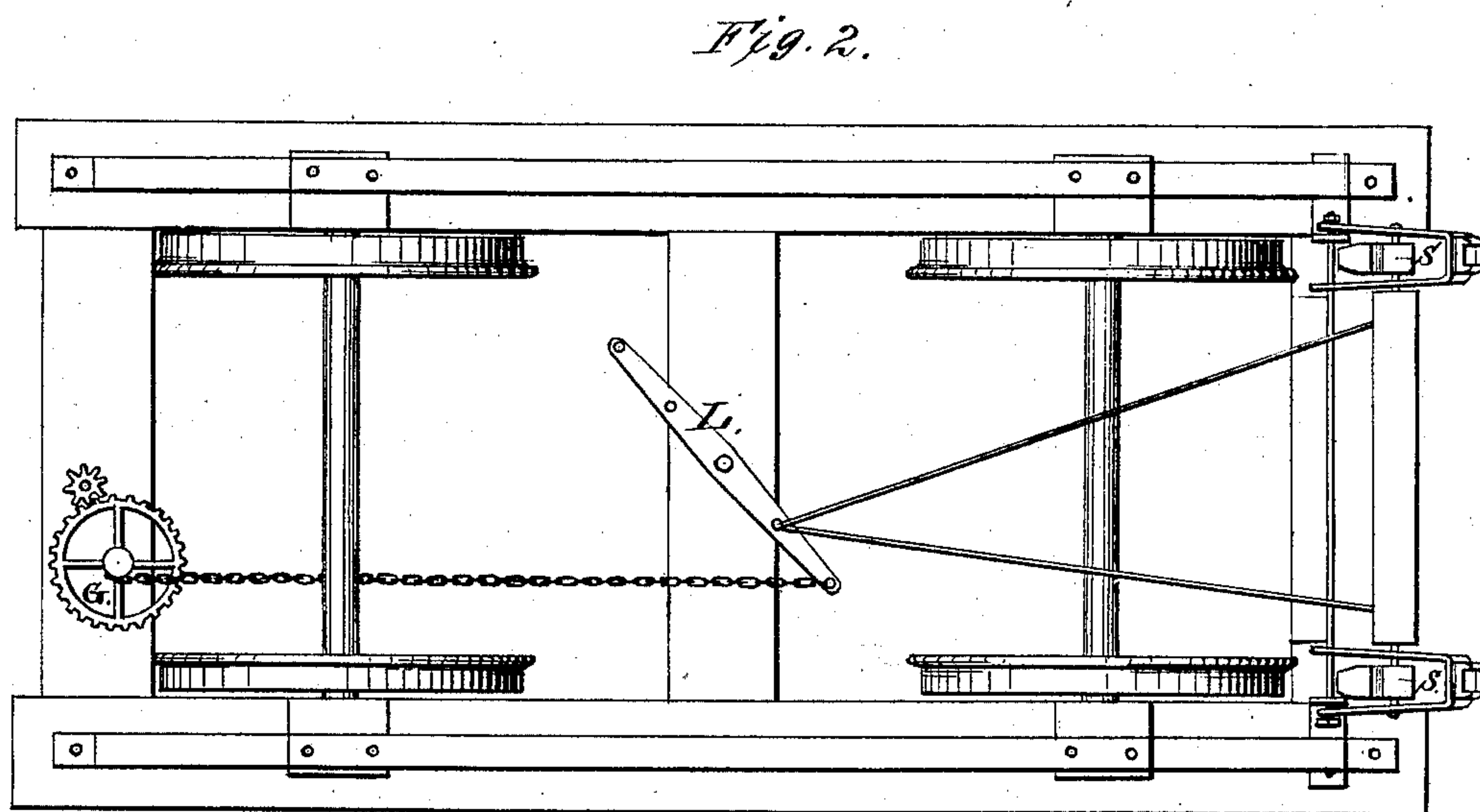
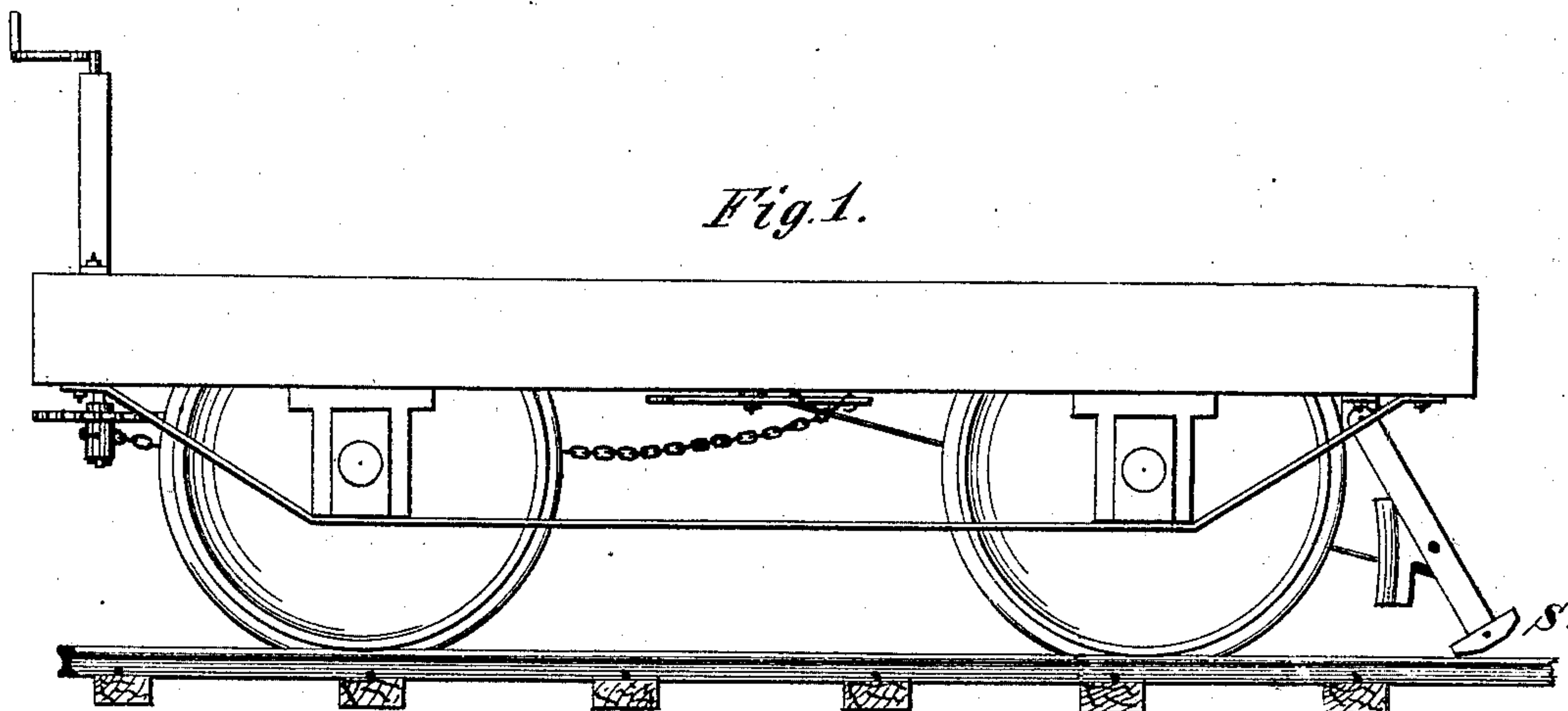


T. McDONOUGH.
Car-Starter.

No. 166,213.

Patented Aug. 3, 1875.



Witnesses:

Jarvis G. Brew
Philip Downes

Inventor:

Thomas McDonough

UNITED STATES PATENT OFFICE.

THOMAS McDONOUGH, OF MONT CLAIR, ASSIGNOR OF TWO-THIRDS HIS
RIGHT TO WILLIAM FOSTER DODGE AND GEORGE R. DUNN, OF
NEWARK, NEW JERSEY.

IMPROVEMENT IN CAR-STARTERS.

Specification forming part of Letters Patent No. **166,213**, dated August 3, 1875; application filed
May 3, 1875.

To all whom it may concern:

Be it known that I, THOMAS McDONOUGH, of Mont Clair, Essex county, New Jersey, have invented a Car-Starter, of which the following is a specification:

The object of my invention is to set a rail-car in motion from a state of rest by means of the weight of the car, which is raised from the track, and in this way to assist the horses in overcoming its inertia. The apparatus to do this is shown affixed to the car-body in the accompanying drawing, in which—

Figure 1 is an elevation, and Fig. 2 is a plan viewed from beneath the car.

Fig. 1 shows the starter, consisting of a shoe, S, hung from the frame over each rail by props. Fig. 2 shows the means by which the driver draws the shoes of the starter down upon the rails, and consists of rods or chains with levers to connect the starter with a crank or handle in the same way that brakes are usually controlled. When the starter is released the shoes are kept away from the track by means of springs, and they may be channeled on the lower face to allow a piece of other metal, wood, or rubber to be inserted at the part that wears away. These shoes may also be put upon the ordinary brakes, so as to be used in connection with them; but in usual

cases the starter stops the car quickly by the friction of the shoes upon the rails.

The action of the starter is as follows: When the shoes are drawn down upon the rails they raise the car off from the wheels, and its weight rests nearly vertically upon the shoes. When the chain that controls the shoes is released the car settles down upon the rails, and its weight, acting with the shoes for a fulcrum on the rails, proves sufficient to throw an ordinary horse-car about two feet forward on level rails. The horses are relieved by this from the strain thrown upon them in the effort to overcome the inertia of the car when at rest.

I find that it is necessary to obtain considerable leverage to draw the shoes down upon the rails, and use for this purpose the lever L and geared wheels G with the chain winding on a barrel or fusee, or any other usual mechanical device to obtain power by change of speed.

I claim—

The lever L and gears G, in combination with the props and shoes, substantially as and for the purpose set forth.

THOMAS McDONOUGH.

Witnesses:

N. O. PILLSBURY,
HUGH GALLAGHER.