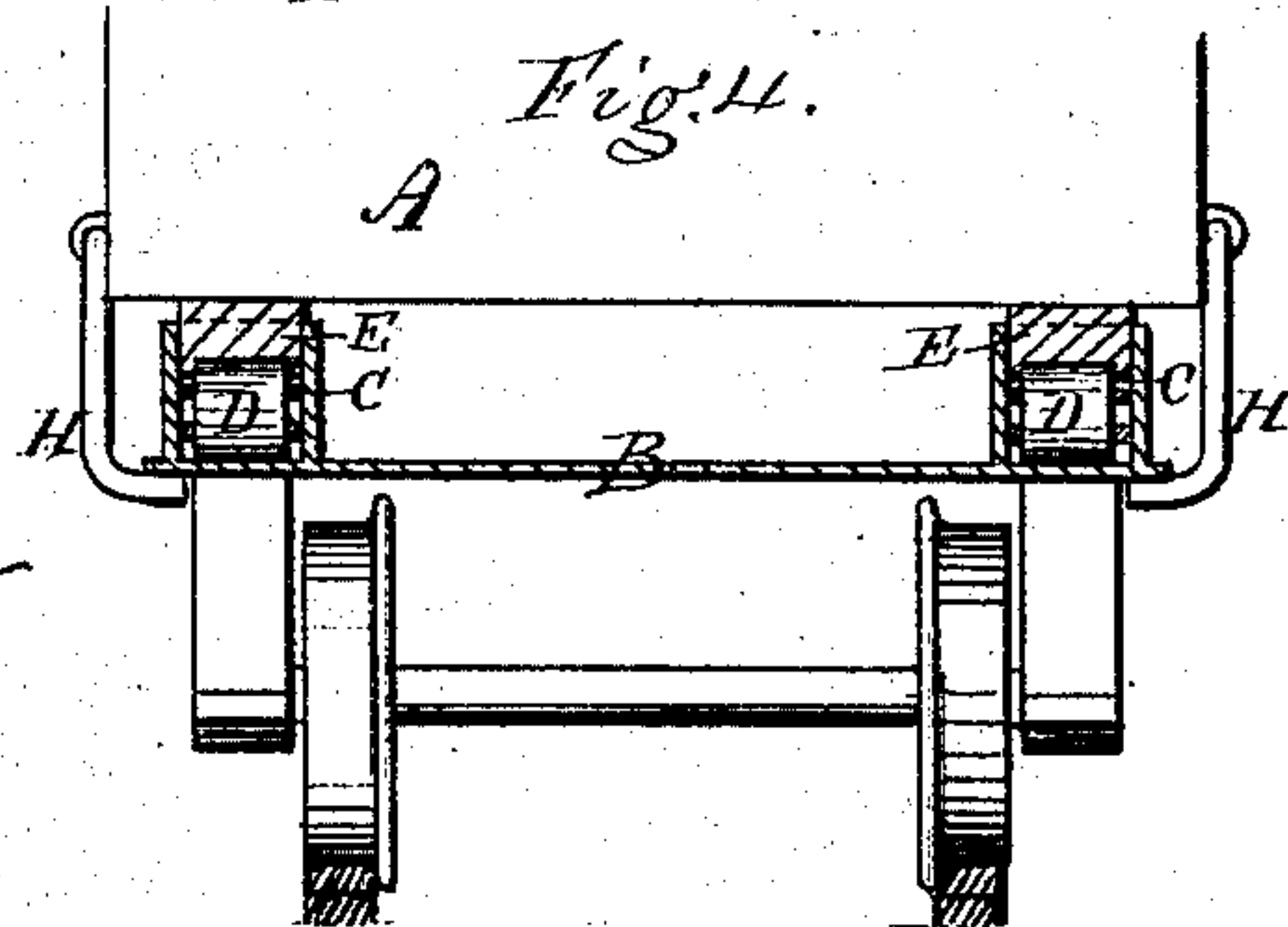
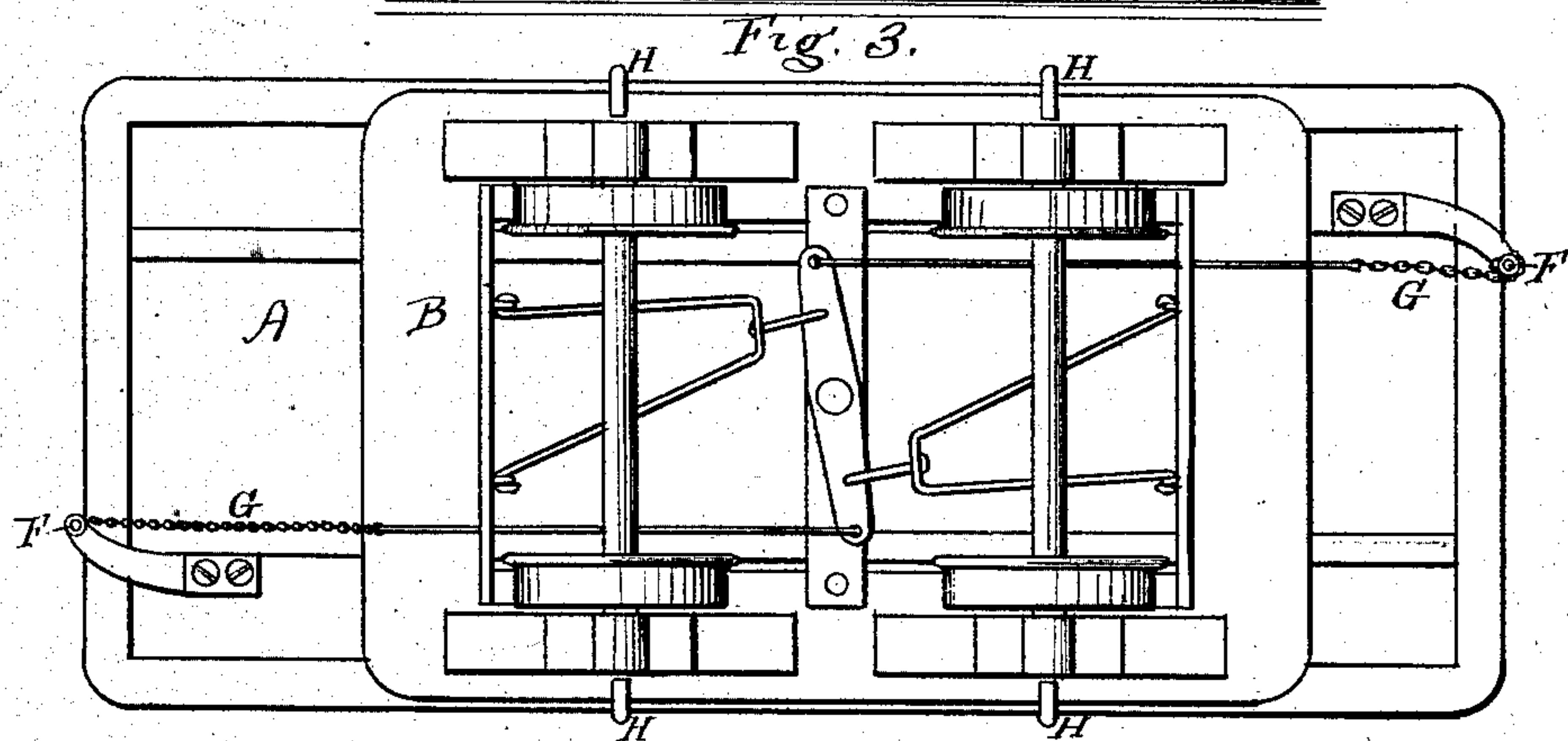
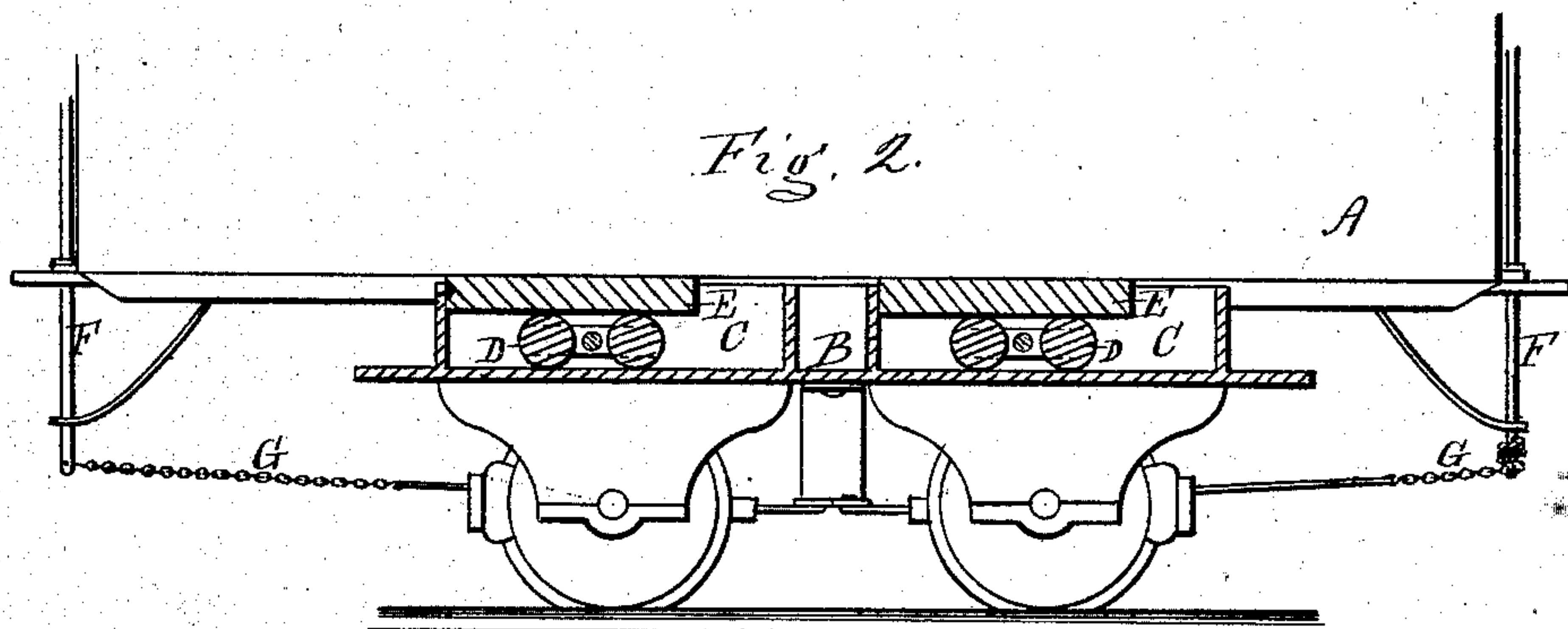
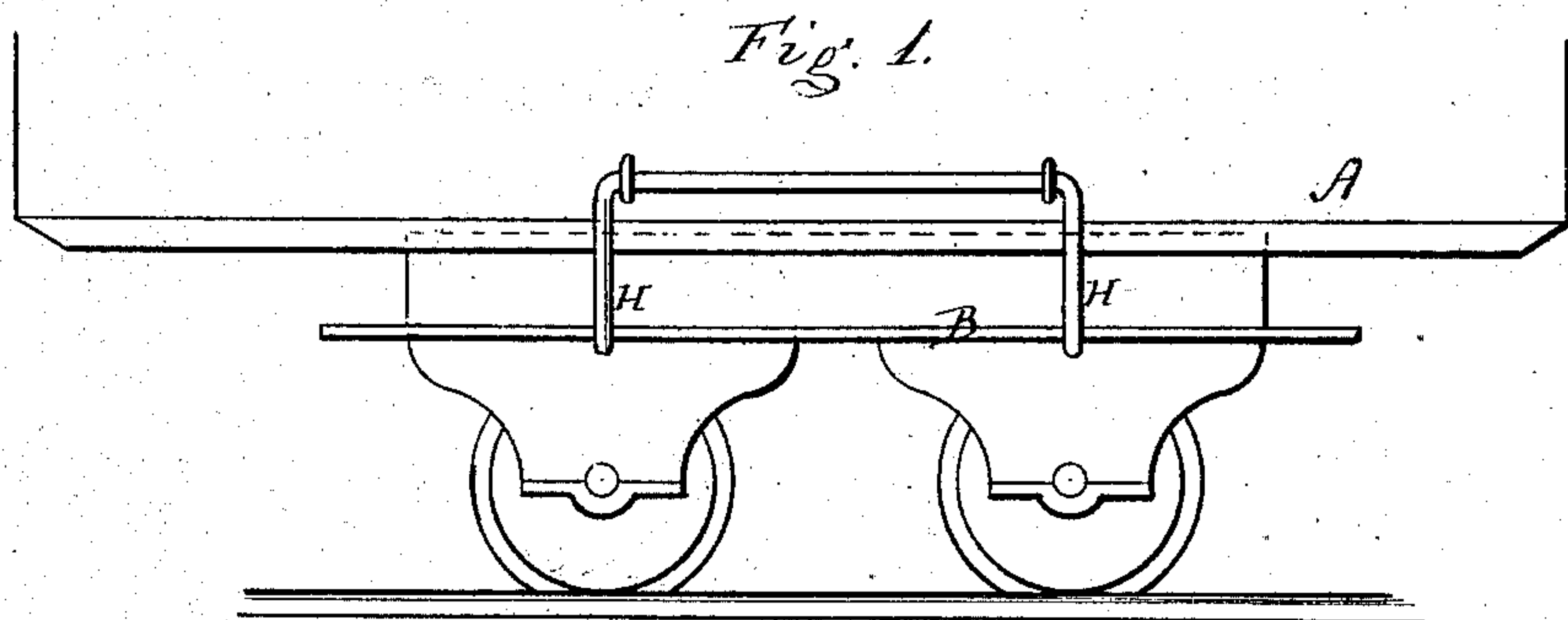


A. S. GEAR.
Car-Starters.

No. 158,585.

Patented Jan. 12, 1875.



Witnesses.

C. Warren Brown
L. E. Hazard

Inventor.

A. S. Gear

UNITED STATES PATENT OFFICE.

ALONZO S. GEAR, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN CAR-STARTERS.

Specification forming part of Letters Patent No. **158,585**, dated January 12, 1875; application filed December 9, 1874.

To all whom it may concern:

Be it known that I, ALONZO STOCKBRIDGE GEAR, of Boston, in the county of Suffolk and State of Massachusetts, have invented an Improvement in the Manufacture of Cars or Carriages; and I do hereby declare that the following, taken in connection with the drawings which accompany and form part of this specification, is a description of my invention sufficient to enable those skilled in the art to practice it.

In constructing cars or carriages many devices have been arranged for the purpose of starting the car, and especially those drawn by horses, with the least possible amount of power, but have, in most, if not all, cases, been defective, and failed to accomplish the desired result.

The object of my invention is to so construct a car that the inertia of the load will be overcome before the wheels are started, thus requiring but a nominal amount of power.

Although my arrangement may be used in the construction of steam-cars and other carriages, I prefer to describe it as specially adapted to the manufacture of cars to be drawn by horses; and it consists of making a frame for the wheels or trucks, on top of which are boxes, and in these boxes are placed rolls, on which projections from the body of the car rest in such a manner that, the power being attached to one end of the car, it is drawn forward upon the peripheries of the rolls, the wheels remaining stationary on account of the excess of friction on the axles. The inertia of the load being thus easily overcome, the car-body moves forward until the projections from the under side thereof strike the ends of the boxes on the truck-frame, when the friction on the axles is readily overcome, the wheels revolve, and the whole is in motion.

Now, it is evident that, in starting on a down grade, no power is required, while on an up grade the body of the car, by its own weight, will settle back on the rolls to the rear end of the boxes on the truck-frame, from which position it is drawn forward again, as before described, and it is only on a level road-bed that it becomes necessary to add anything to bring the body of the car into position to be started with the least amount of power. To accom-

plish this I attach to the truck-frame the common lever-brakes, and to the body of the car the common hand wheel or lever, and they operate in such a manner that, as the car is on a down grade and the brakes set, the turning of the hand-lever winds up the chain and draws back the load on the rolls; and, if the weight of the load does not give sufficient friction of the brake-shoes on the wheels, the lever is turned again until the projections strike the rear ends of the boxes on the truck-frame, when the brakeman has the same leverage as with the arrangement in general use.

The operation on a level road is the same as on a down grade, the brakeman, in stopping, forcing the body of the car back on the rolls, leaving it in position to be started, as before described.

Should it become necessary to connect the body of the car with the truck-frame on account of overloading at either end, I simply attach to the body of the car some iron rods, bent so as to lap under the truck-frame, and on which I place rolls, or not, as desired.

Accompanying this specification are drawings representing my invention, in which—

Figure 1 represents a side elevation of the car. Fig. 2 is a sectional elevation, showing the rolls, boxes, and projections, and with the body in position to be drawn forward. Fig. 3 is a plan of the truck-frame, showing the rolls in the same position. Fig. 4 is a sectional elevation through the truck-frame.

In the drawings, A represents the body of the car; B, the truck-frame, on top of which are the boxes C C and rolls D D. Extending from the body of the car A are projections E E, which rest upon the rolls in such a manner that, as power is applied to the body of the car, it is drawn forward on the rolls until the projections strike the ends of the boxes C C on the truck-frame, after which the wheels are revolved, and, except on a down grade, all the parts maintain the same relative position until it becomes desirable to stop, in order to do which I attach to the truck-frame the ordinary braking mechanism, and on the body of the car the common hand wheel or lever F, which, together with the chain G, serve not only to stop the car, but also to bring it into position for starting, as before described. To prevent

the body of the car from leaving the truck-frame from overloading at either end, or other cause, I attach thereto rods H, bent so as to lap under the truck-frame, thus connecting the two as firmly as though they were bolted together.

I prefer to construct cars in the manner described; but, should it be desirable to bring the car-body into position on the rolls, aside from the power applied by the brakeman on the hand-lever, I propose to use springs of such a power, and make the boxes on my truck-frame of such a length, that, when on a level road, the springs will bring the projections from the body of the car into the center

of the boxes, or thereabout, thereby always leaving plenty of leeway to start the car-body on the rolls in either direction.

I claim—

1. In combination with the car-body A and its projections E E, the truck-frame B, boxes C C, and rolls D D, substantially as described.

2. In combination with the car-body A and truck-frame B, the bent rods H H, substantially as and for the purpose set forth.

ALONZO S. GEAR.

Witnesses:

C. WARREN BROWN,

L. E. HAZZARD.