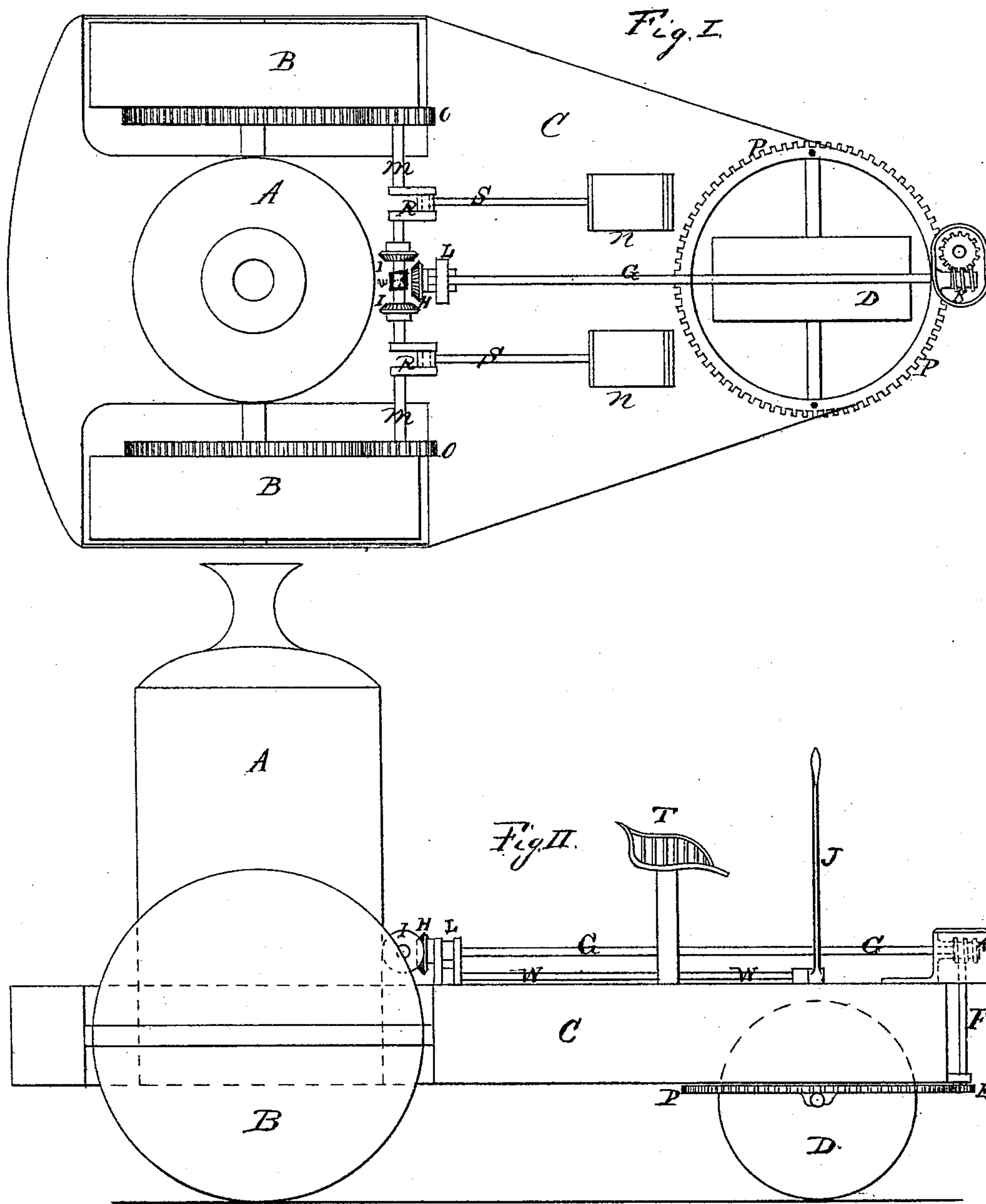


G. W. FITTS.
TRACTION-ENGINE.

No. 175,601.

Patented April 4, 1876.



Witnesses:

August Albrecht
Anna S. Fitts

Inventor:

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UNITED STATES PATENT OFFICE.

GEORGE W. FITTS, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN TRACTION-ENGINES.

Specification forming part of Letters Patent No. **175,601**, dated April 4, 1876; application filed April 18, 1873.

To all whom it may concern:

Be it known that I, GEORGE W. FITTS, of the city of Philadelphia and Commonwealth of Pennsylvania, have invented a new and Improved Steering-Gear for Steam-Vehicles, of which the following is a specification:

The nature of my invention consists in connecting the guide-wheel of a steam-vehicle with the engines of the same in such a manner that the motion of the engines may be communicated to the guide-wheel so as to turn it in any desired direction by simply moving a lever back and forth, by which means I am enabled to guide the steamer with great ease and precision.

In order to fully explain my invention, the following description and accompanying drawings are referred to as forming a part of my specification of the same.

Figures 1 and 2 are side and surface views of a three-wheeled steam-vehicle, showing the steam-boiler, driving-wheels, water-tank, engines, and the guide-wheel, connected with the engines by shafts, gearing, levers, &c.

A is the steam-boiler. C is the water-tank, one end attached to the boiler and the other resting upon the axle of the guide-wheel. B B are the driving-wheels fitted to the axle, upon which the boiler and tank rest. D is the guide-wheel. The axle of this wheel is bolted at each end to a pinioned circle, P, Fig. 1, which has a convex upper surface that fits into a grooved circle that is attached to the under side of the tank, and which permits the circle P to revolve horizontally within the same, carrying the guide-wheel with it, so that a pinion operating upon the pinioned circle P will give to the guide-wheel a horizontal motion at the same time that it has a circular motion upon its axle.

E is a small pinion, placed upon the lower end of the vertical shaft F, and gears into the pinioned circle P and operates the same.

F is a small vertical shaft, with small pinions upon each end, one of which communicates with the guide-wheel, and the other with a worm-gear, K, upon the shaft G, Fig. 2.

G is a small horizontal shaft, upon one end of which is a small worm-gear, K, that connects with the guide-wheel by means of the vertical shaft F.

Upon the other end of the shaft G is a small beveled pinion, H, Fig. 1, that gears into the beveled pinions I I, Fig. 1, which are fixed upon the engine-shafts M M.

J, Fig. 2, is a lever, attached to the end of the horizontal shaft W. Upon the opposite end of this shaft is fastened a short arm, L, through which the shaft G passes and revolves. The office of this lever is to throw the shaft G, with the beveled pinion H, in and out of gear, with the pinions I I attached to the engine-shafts.

M M are the engine-shafts upon which are fixed the driving-pinions O O, engine-cranks R R, and beveled pinions I I, and connecting-clutch U.

N N are the steam-cylinders, connected with the cranks R R and shafts M M by the pitmen S S.

T is the driver's seat, fastened to the top of the water-tank near to the lever J.

It will be seen by the above description that the driver, by simply moving the lever J back and forth so as to put the small pinion H into gear with either of the pinions I I upon the engine-shafts, can communicate their motion to the guide-wheel by means of the shafts G and F and the pinions attached thereon, so as to turn the same in a horizontal direction either way, as it will be noticed that, when the small pinion H is in gear with either of the pinions I, it will receive an opposite direction when shifted from one to the other, thus enabling the driver to change the direction of the guide-wheel and steamer, as the motion is transferred from the engines by simply moving the lever J back and forth.

I do not claim anything shown or described in Robinson's Patent, No. 15,820; but

I claim—

A guide-wheel for steam-vehicles, combined and geared with the engine or crank shafts of the same and operated thereby, substantially as and for the purpose set forth.

GEORGE W. FITTS.

Witnesses:

ANNA S. FITTS,
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