

(No Model.)

W. S. OWINGS.  
TRACTION ENGINE.

No. 291,075.

Patented Jan. 1, 1884.

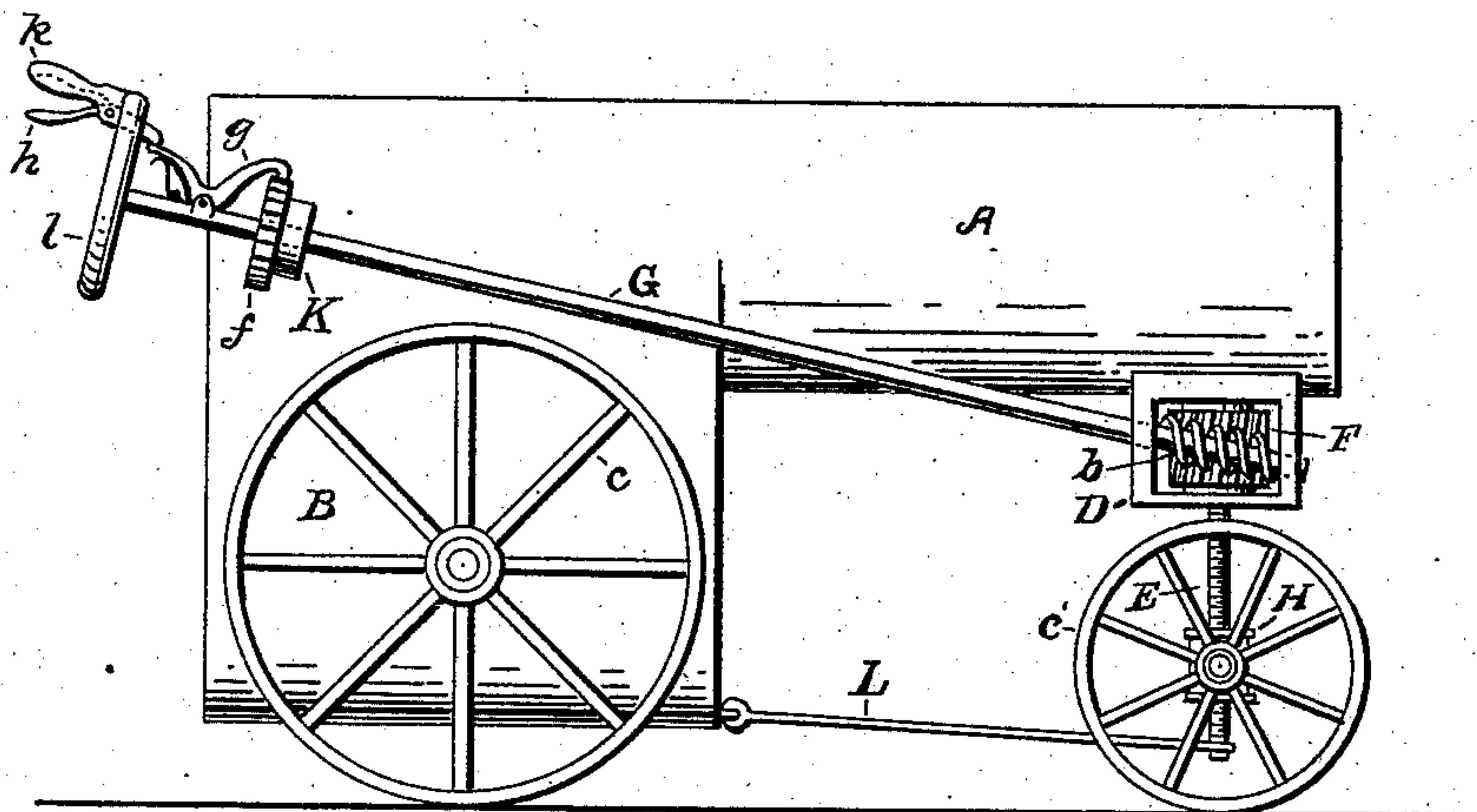


Fig. 1.

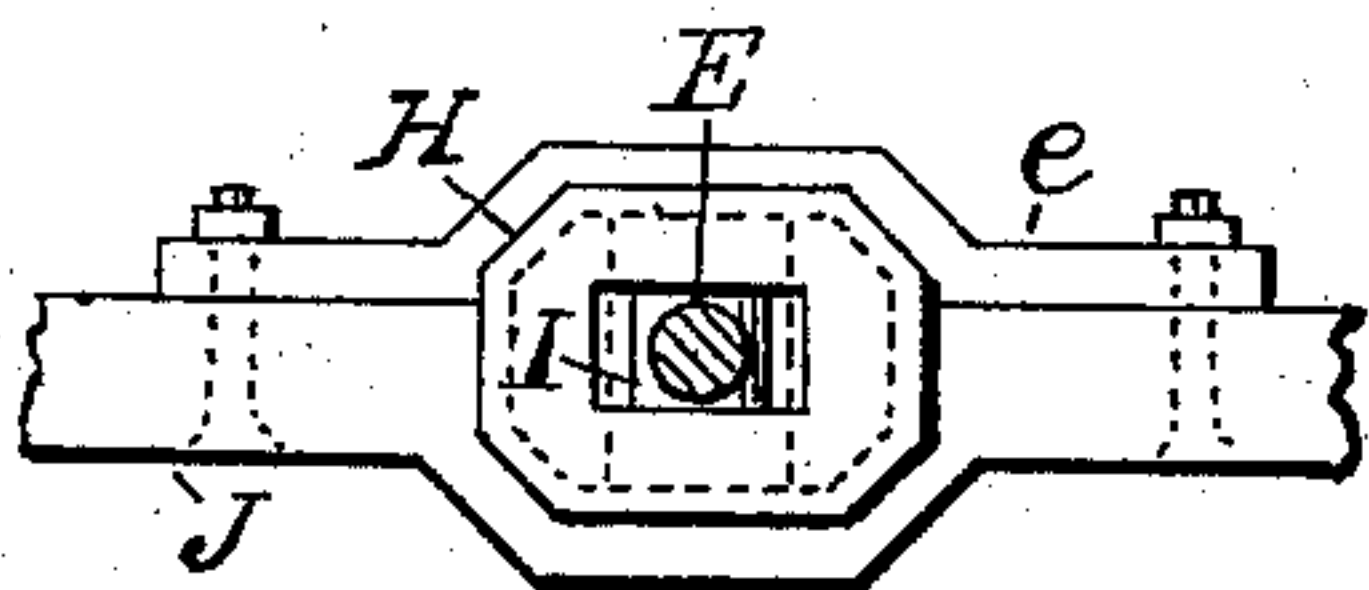


Fig. 3.

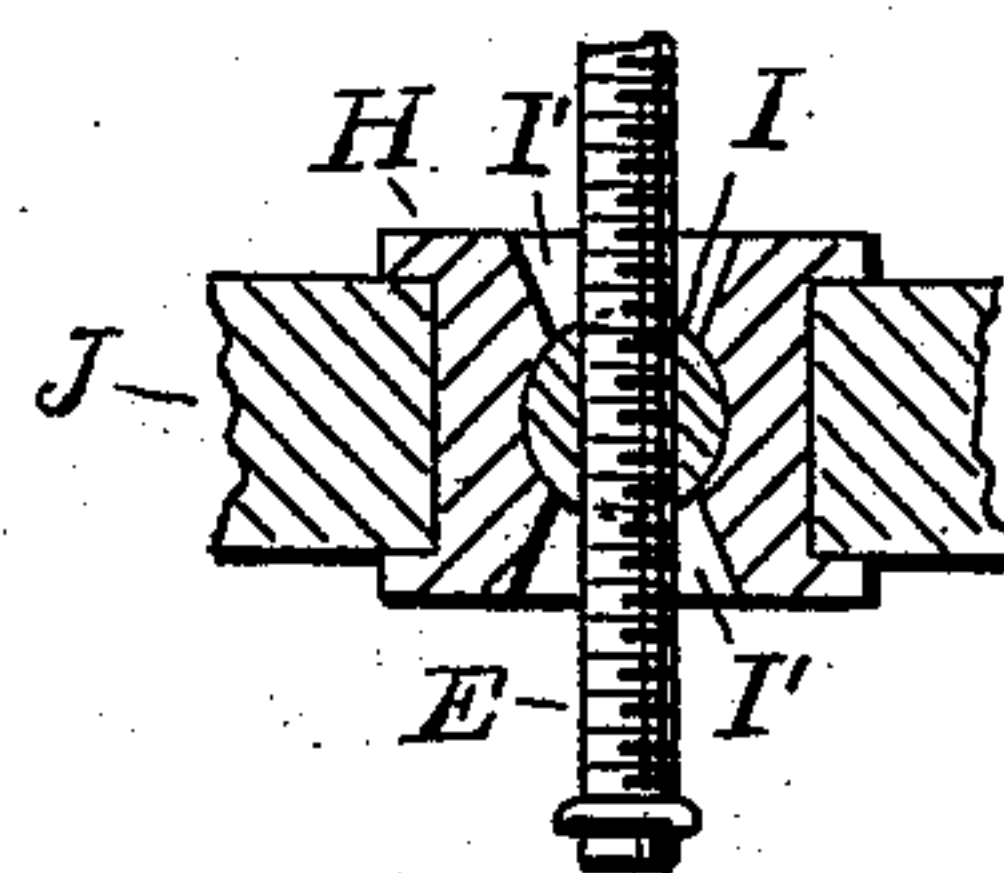


Fig. 4.

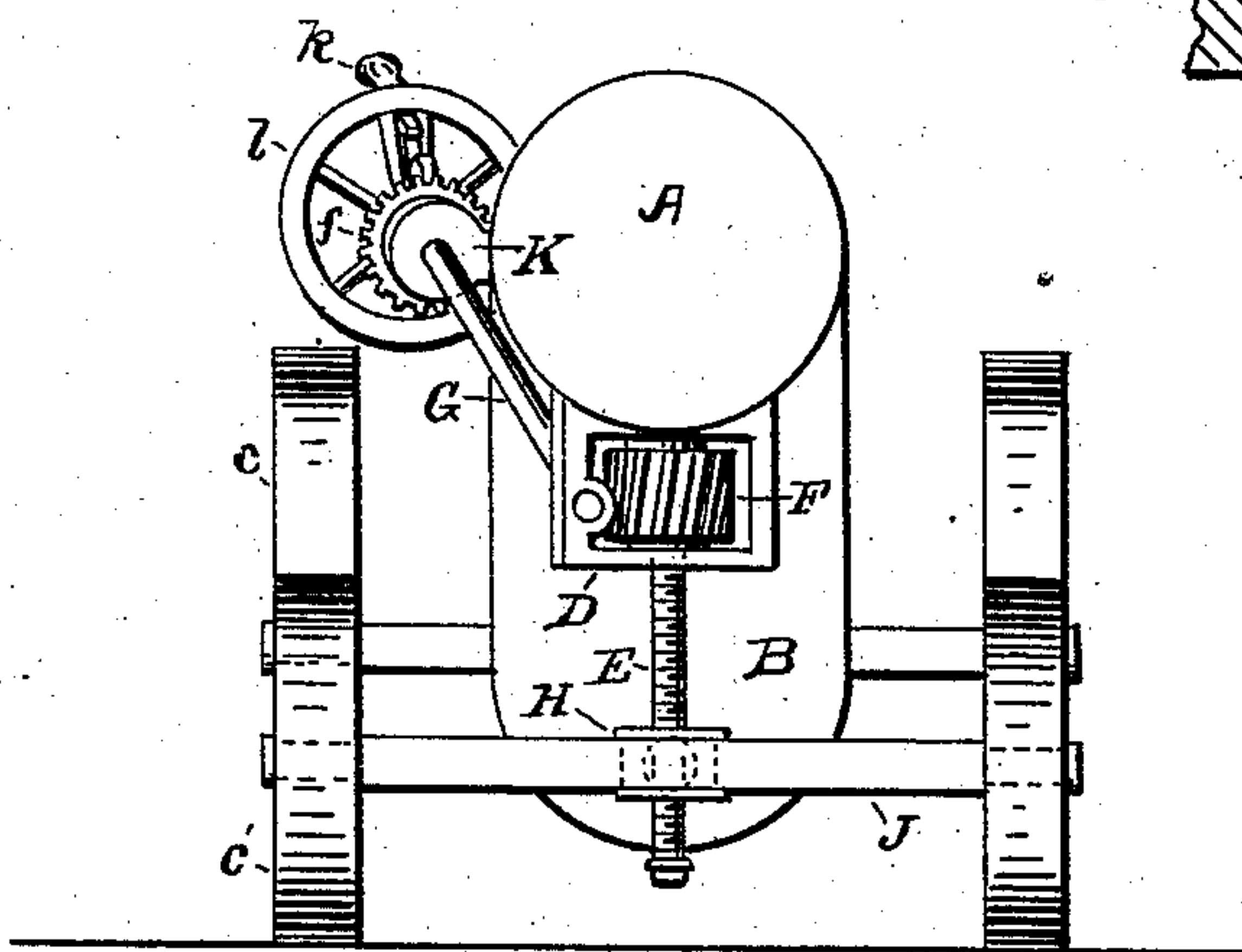


Fig. 2.

WITNESSES.

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# UNITED STATES PATENT OFFICE.

WILSON S. OWINGS, OF COLLIER'S STATION, WEST VIRGINIA.

## TRACTION-ENGINE.

SPECIFICATION forming part of Letters Patent No. 291,075, dated January 1, 1884.

Application filed July 21, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, WILSON S. OWINGS, a resident of Collier's Station, in the county of Brooke and State of West Virginia, have invented certain new and useful Improvements in Mode of Leveling Traction-Engines; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in that class of steam-engines known as "portable" or "traction" engines, the object of the invention being to provide mechanical means to raise or lower the end of the boiler, for the purpose of adjusting it in a horizontal position when the carriage is moving over sloping or uneven ground or resting on an incline, to prevent the water from running to one end or the other of the boiler, frequently causing explosions and putting out the fires, &c.

In the drawings, Figure 1 is a side view, and Fig. 2 a front end view, of a traction-engine. Figs. 3 and 4 are details on a larger scale.

A represent the boiler, and B the fire-box.

C' C' are the front wheels and C C the rear ones. The boiler and fire-box are mounted on said wheels. Under the forward end of the boiler, directly over the axle, is a metal box, D, secured to the under side of the boiler by bolts or other well-known means.

E is a vertical screw-threaded king-bolt fitted with a spirally-toothed wheel, F, on the upper end, and journaled in the box D. The wheel F is operated by an oblique crank-rod, G, attached to the side of the engine, the lower end passing through the side of the bearing-box and having a worm, b, which meshes with the spirally-toothed wheel F on the king-bolt. The king-bolt works up and down through an oscillating cylindrical nut, I, which is centered crosswise in a socket-block, H, secured to the axle J. The nut I is provided with a transverse-threaded opening for the reception of the threaded king-bolt E. The sides of the top and bottom sockets, I' I', in the socket-block H, are beveled to admit of the lateral play of

the king-bolt E therein, as shown in Fig. 4. To secure this movable connection to the axle, the axle is swaged out in the center sufficient to receive one-half of the socket-block H, and after said block is placed in position a side-strap piece, e, having a recess to receive the other half of the block, is bolted onto the side of the axle, thus holding it rigidly in place, as shown in Fig. 3. The crank-rod G is attached to the side of the engine, at the rear part, by means of a flat-faced stud or ear, K, having a bore for the passage for the rod, and fitted with a small pinion, f, attached to the side of the stud, to act in the manner of a ratchet-wheel. Secured to the rod is a spring-actuated pawl, g, which is operated by a small spring-lever, h, attached to the handle k on the wheel l. By means of the pawl engaging with the fixed pinion on the stud the rod is held stationary.

L is a brace-rod secured to the side of the fire-box at one end, and to the lower end of the king-bolt, to strengthen the king-bolt and hold it firmly in a vertical position.

The mode of operation is as follows: The operator takes hold of the handle on the wheel, and by a slight pressure on the small lever releases the pawl from engagement with the pinion, and by simply turning the crank-rod causes the worm meshing in the cog-wheel on the end of the king-bolt to revolve the same, running it up or down, as desired, through the movable nut in the socket secured to the axle, which movement raises or lowers the forward end of the boiler, as desired, to bring it into a horizontal position.

Having described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In a device for leveling boilers, a rod revolvably secured to the boiler, and provided on its forward end with a worm-screw, a threaded king-bolt having a spirally-toothed wheel fixed on the upper end thereof, said worm-screw and toothed wheel meshing, in combination with an axle provided with a threaded oscillating nut for the reception of said king-bolt, substantially as described, and for the purpose set forth.

2. In a device for leveling boilers, a rod revolvably secured to the boiler, and provided on its forward end with a worm-screw, a threaded



king-bolt having a toothed wheel fixed on the upper end thereof, said worm-screw and toothed wheel meshing, in combination with an axle provided with a bevel-socket block, 5 said block having an oscillating nut therein for the reception of the king-bolt, substantially as described, and for the purpose set forth.

3. In a device for leveling boilers, a rod rev-  
olubly secured to the boiler, and provided on  
10 its forward end with a worm-screw, the forward end of said rod being journaled in a box under the front end of the boiler, said box having a toothed wheel therein, said wheel being mounted upon the upper end of the threaded  
15 king-bolt, in combination with the forward axle of the machine provided with a socket-block having oscillating threaded nut therein, adapted to receive the threaded king-bolt, substantially as described, and for the purpose  
20 set forth.

4. In a device for leveling boilers, a rod rev-  
olubly mounted in a lug projecting from the  
side of the boiler, said lug having a spur-wheel

fixed thereto, said rod being provided on its upper end with an actuating crank-wheel and 25 a spring-actuated pawl adapted to engage the spur-wheel and prevent the revolution of said rod, the forward end of the rod being provided with a worm-screw, in combination with a spirally-toothed wheel rigidly mounted upon 30 a threaded king-bolt, said king-bolt being mounted in a threaded oscillating nut in a socket-block on the forward axle, substantially as described, and for the purpose set forth.

5. The combination, with the crank-rod G, 35 of the pawl g, ratchet-wheel f, and lever h, for releasing the same, substantially as and for the purpose set forth.

In testimony that I do claim the foregoing as my own I hereby affix my signature in pres- 40  
ence of two witnesses.

WILSON S. OWINGS.

Witnesses:

JAMES APPLIGATE,

JAMES C. LEECH.