

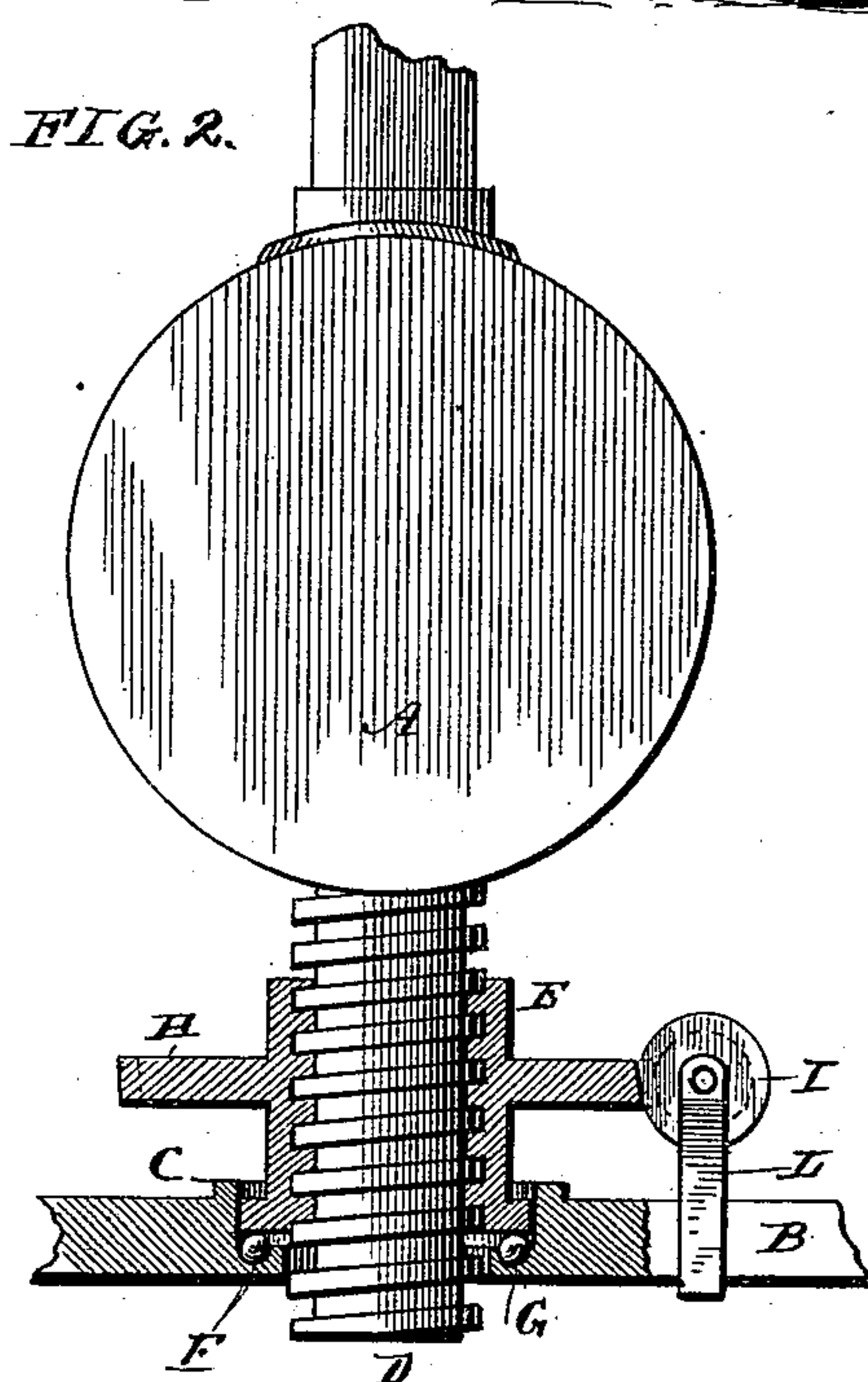
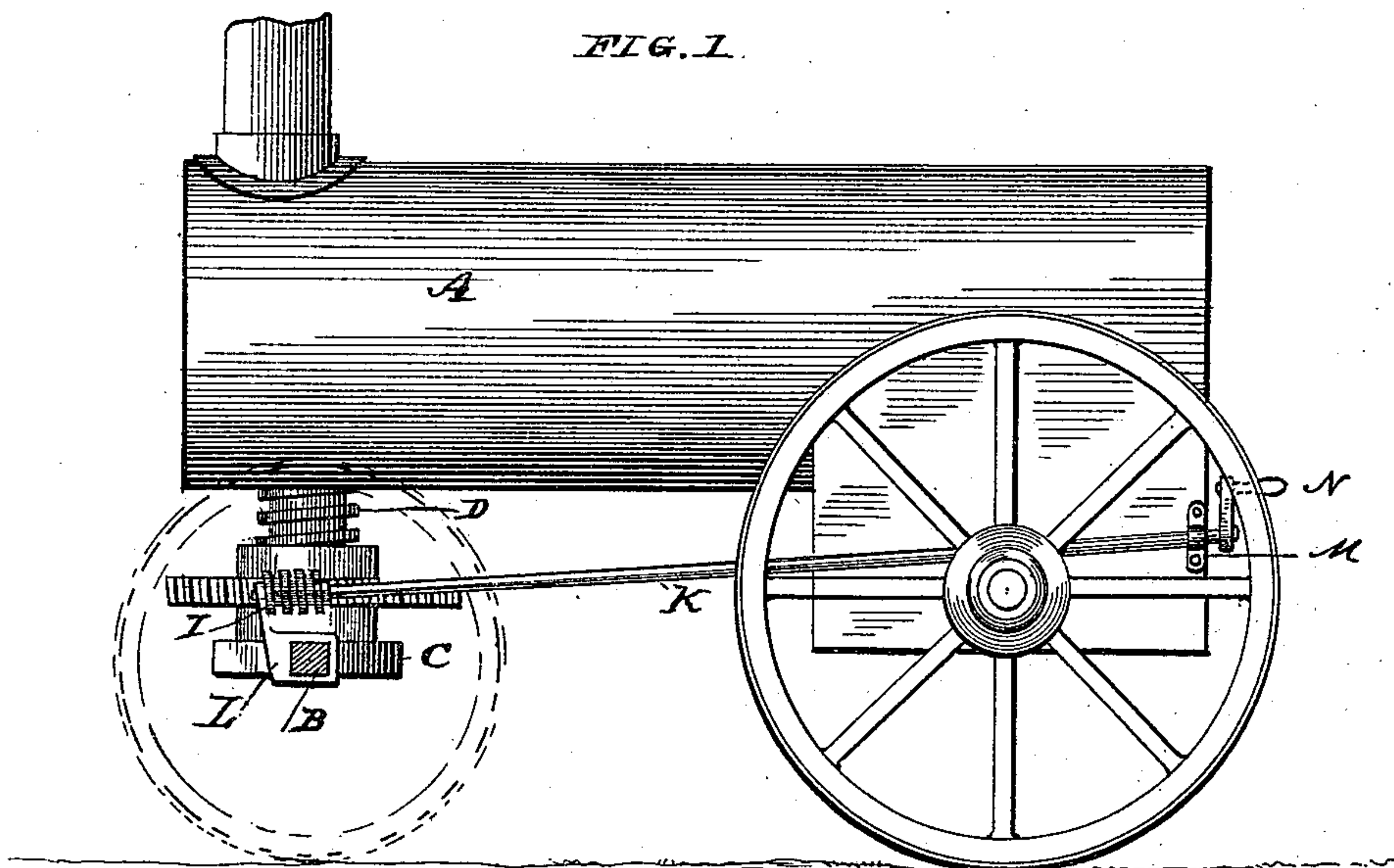
(No Model.)

T. A. LONG.

PORTABLE OR TRACTION ENGINE.

No. 354,605.

Patented Dec. 21, 1886.



Witnesses

Edwin T. Yewell,  
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# UNITED STATES PATENT OFFICE.

T. AVERY LONG, OF HOWARD, PENNSYLVANIA.

## PORTABLE OR TRACTION ENGINE.

SPECIFICATION forming part of Letters Patent No. 354,605, dated December 21, 1886.

Application filed June 14, 1886. Serial No. 205,041. (No model.)

*To all whom it may concern:*

Be it known that I, T. AVERY LONG, a citizen of the United States, residing at Howard, in the county of Center, State of Pennsylvania, have invented certain new and useful Improvements in Portable or Traction Engines, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to improvements in devices for adjusting or raising and lowering one end of the boilers of traction or portable engines.

The object of my invention is to provide means by which one end of the boiler of a portable or traction engine can be raised or lowered as occasion may require, so as to adjust the same with relation to the plane on which the engine is standing or traveling, in order to keep the flues of the boiler covered with water, and thus prevent them from being injured or destroyed by the heat of the furnace.

Referring to the drawings, Figure 1 is a side view of a traction or portable engine with my improvements thereon. Fig. 2 is an end view, partly in section, showing the adjusting devices.

A indicates the boiler mounted on wheels in any suitable manner, the rear end of said boiler being so connected to the rear axle that it will admit of the front of the boiler being raised or lowered as occasion may require.

B is the front axle, the center of which is provided with an enlarged portion, C, through which is formed an opening to receive the screw shaft or standard D, the upper end of which is secured to the front end of the boiler in any convenient or substantial manner.

E is a screw-threaded nut or disk, the lower end of which is adapted to rest on the friction balls or wheels F, located in a grooved ledge, G, formed in the enlarged portion of the front axle. The nut or disk E is provided with screw-threads adapted to receive the screw-threads of the screw-shaft D, as clearly shown in Fig. 2.

The screw nut or disk E is provided with an annular projection or plate, H, the edge of which is provided with pinion or cog teeth adapted to receive the worm I on the shaft K. The front end of the shaft K is mounted or

supported in the bracket L, the rear end of said shaft being supported in the bracket M, and is provided with a handle, N, which is within easy reach of the operator.

It will be noticed that as the shaft K is rotated the screw nut or disk E will be revolved, and the screw-shaft D and front end of the boiler will be raised or lowered as occasion may require, and in this way the boiler is adjusted so as to be always on a level, and thus the flues are always covered with water, and all danger of burning or overheating the same is obviated.

Other devices besides the worm-gear may be used to operate the screw nut or disk; but I prefer the worm-gear, for the reason that the nut can be more readily operated without exerting so much power.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a traction or portable engine, the combination of the boiler, the stationary screw secured to the forward end thereof, a nut provided with an internal screw-thread and external teeth arranged upon the screw, the axle provided with the recess to form a seat for the nut, and means, substantially as described, for engaging the teeth of the nut to revolve the same to raise and lower the boiler in relation to the axle, as set forth.

2. In a traction or portable engine, the combination of the boiler, a stationary screw secured thereto at its forward end, a nut engaging the screw provided with an internal screw and external teeth, the axle provided with the circular recess in which the nut rests and the perforation for the passage of the screw, and the shaft and worm-wheel thereon to engage the teeth of the nut, substantially as and for the purpose set forth.

3. The screw-nut H, mounted on friction rollers or balls in the front axle of the machine, and devices, substantially as described, for operating said nut, as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

T. AVERY LONG.

Witnesses:

W. H. LONG,

W. W. HALE.