

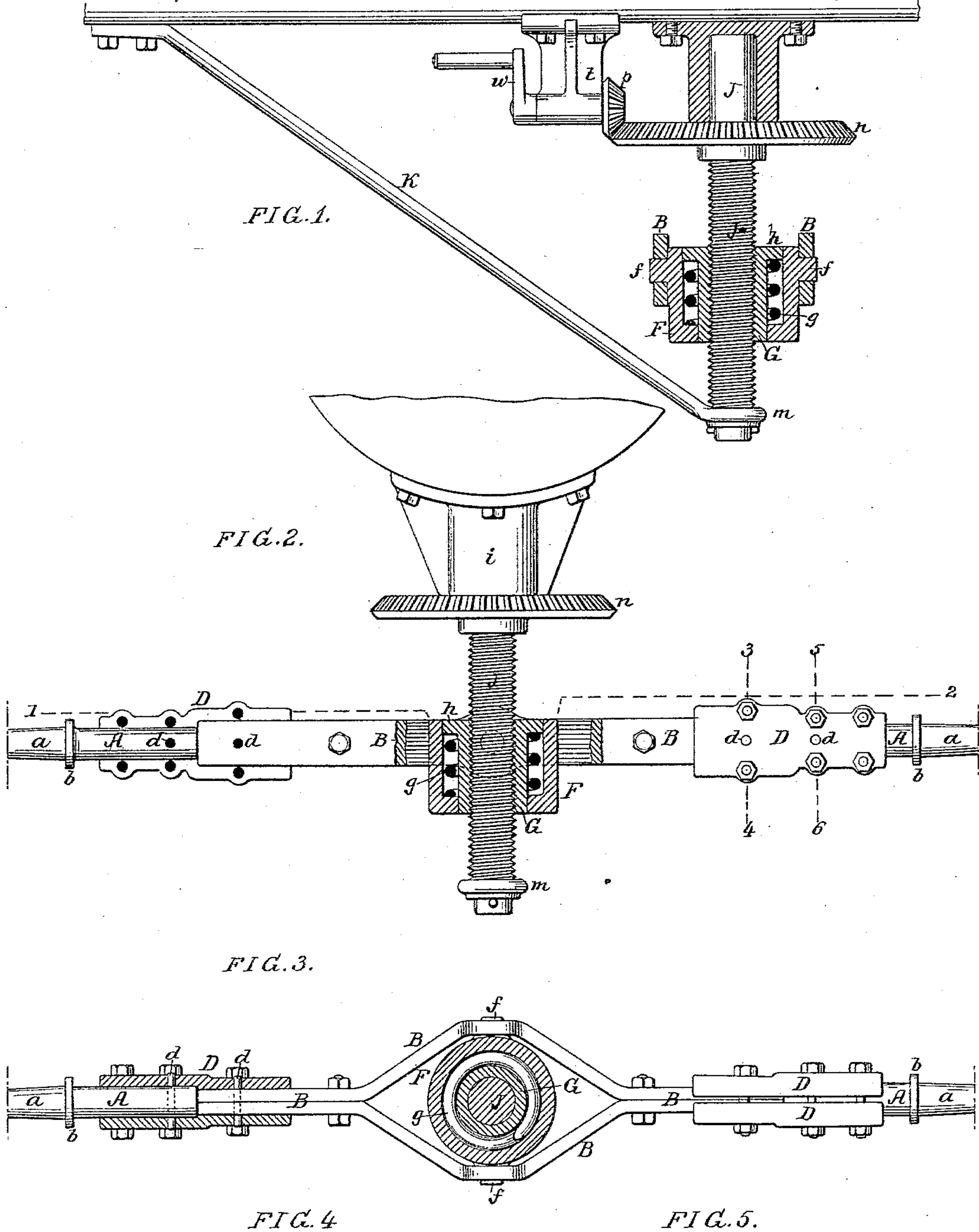
(No Model.)

H. B. LARZELERE.

TRACTION ENGINE.

No. 300,271.

Patented June 10, 1884.



Witnesses
John E. Parker
James F. Tobin

Inventor
Henry B. Larzelere
by his Attys
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UNITED STATES PATENT OFFICE.

HENRY B. LARZELERE, OF GREENCASTLE, PENNSYLVANIA, ASSIGNOR TO
THE CROWELL MANUFACTURING COMPANY, OF SAME PLACE.

TRACTION-ENGINE.

SPECIFICATION forming part of Letters Patent No. 300,271, dated June 10, 1884.

Application filed February 18, 1884. (No model.)

To all whom it may concern:

Be it known that I, HENRY B. LARZELERE, a citizen of the United States, and a resident of Greencastle, Franklin county, Pennsylvania, have invented certain Improvements in Running-Gear for Portable or Traction Engines, of which the following is a specification.

One object of my invention is to make a cheap axle for the forward truck of the engine; and a further object is to provide simple and efficient means for leveling the boiler when the engine is standing on or running over uneven ground, the leveling devices being such as not to interfere with the spring-support for the front end of the boiler. These objects I attain in the manner hereinafter set forth, reference being had to the accompanying drawings, in which—

Figure 1 is a longitudinal section through the front axle, part of the boiler and the elevating device being shown in outside view; Fig. 2, a transverse view, partly in section and partly in elevation; Fig. 3, a sectional plan on the line 1 2, Fig. 2; and Figs. 4 and 5, sections, respectively, on the lines 3 4 and 5 6, Fig. 2.

The axle is a composite one, there being the opposite short shafts A, with journals *a* and collars *b*, the central bars, B, against the ends of which the shafts A abut, and the clamping-bars D, recessed for the reception of the shafts A and the ends of the bars B, and serving to secure the said shafts and bars together, the clamping-bars being confined by means of bolts and nuts, as shown.

To prevent longitudinal displacement of the shafts A the clamping-bars are secured thereto and to the bars B by transverse pins *d*. The bars B are bowed in the center for the reception of a box, F, trunnions *f* on which are adapted to openings in the bars, so that said bars are free to vibrate on the box, the latter containing a spring, *g*, upon which rests a flange, *h*, at the upper edge of a nut, G, which passes through an opening in the bottom of the box, and is free to rise and fall therein under control of the spring.

To the nut G is adapted the screw-spindle J, the upper end of which turns in a bearing in a bracket, *i*, secured to the under side of the boiler, the lower end of the spindle being

adapted to an eye, *m*, at the lower end of a brace, K, the upper end of which is also secured to the under side of the boiler.

Secured to the spindle G is a bevel-wheel, *n*, which gears into a bevel-pinion, *p*, secured to a short shaft adapted to bearings in a hanger, *t*, on the boiler, and having a crank, *w*, whereby it can be conveniently turned, so as to rotate the wheel *n* and the screw-spindle, and thus raise or lower the front end of the boiler, in order to properly level the same when the front wheels are higher or lower than the rear wheels. In the case of a portable engine this can be done when the engine reaches the position where it is to remain during use, but in a traction-engine the leveling of the boiler must be effected while the engine is traveling over uneven ground; and in this case means should be provided for operating the leveling devices from the driver's platform at the rear of the machine.

The bevel-wheel and pinion devices shown are not necessary to the carrying out of my invention, as a capstan may be used in place of the bevel-wheel *n*; or the spindle J may be stationary and the nut G may be turned, the effect being the same.

The spring *g* provides an elastic support for the boiler without interfering with the proper raising and lowering of the same, and although the box F is practically part of the axle it is so pivoted to the bars B of the same that the opposite wheels are free to rise or fall independently of each other without straining either the axle or screw-spindle, while the axle can turn on the spindle in the same manner as upon a king-bolt, in order to steer the engine.

In cases where it is not desired to elevate the boiler, a plain spindle having a collar for bearing upon the spring may take the place of the screw-spindle and nut.

The shafts A may be of wrought-iron or steel, the clamps D of cast or malleable iron or cast-steel, and the bars B of ordinary merchant iron, so that the composite axle can be made at a much cheaper rate than an axle forged from a single bar, and injury to any part of the axle can be readily repaired without the necessity of renewing the entire axle.

I do not claim, broadly, a composite axle

composed of central bars having journals bolted to their opposite ends; nor do I claim to be the first to support the adjusting-screw by a nut capable of swinging on the axle; but

5 I claim as my invention—

1. The combination of the central bar or bars, B, of the axle with the short shafts A, abutting against the ends of said bar or bars B, and having journals *a*, and with opposite
10 clamping-bars D, having in their inner faces recesses for the reception of the bars and shafts, as set forth.

2. The combination of the axle, the boiler, the spindle J, carried by the boiler, and the
15 box F, pivoted to the axle, and having a spindle supporting spring, *g*, as set forth.

3. The combination of the boiler and the spindle J, carried thereby, the pivoted box F, having a spindle supporting spring, and the
20 axle, composed of two bars, B, united at the ends and bowed in the center for the reception of the box F, as set forth.

4. The combination of the boiler and the screw-spindle J, carried thereby, with the axle, its pivoted box F, and the spring-supported
25 nut G, adapted to the screw-spindle J, as specified.

5. The combination of the axle, the boiler, the screw-spindle J, free to turn in bearings on the boiler, the nut G, adapted to the screw-
30 spindle, the box F, pivoted to the axle and carrying a spring, *g*, for supporting the nut, and gearing, substantially as described, whereby said screw-spindle may be turned, as set
35 forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HENRY B. LARZELERE.

Witnesses:

JOHN E. PARKER,
HARRY SMITH.