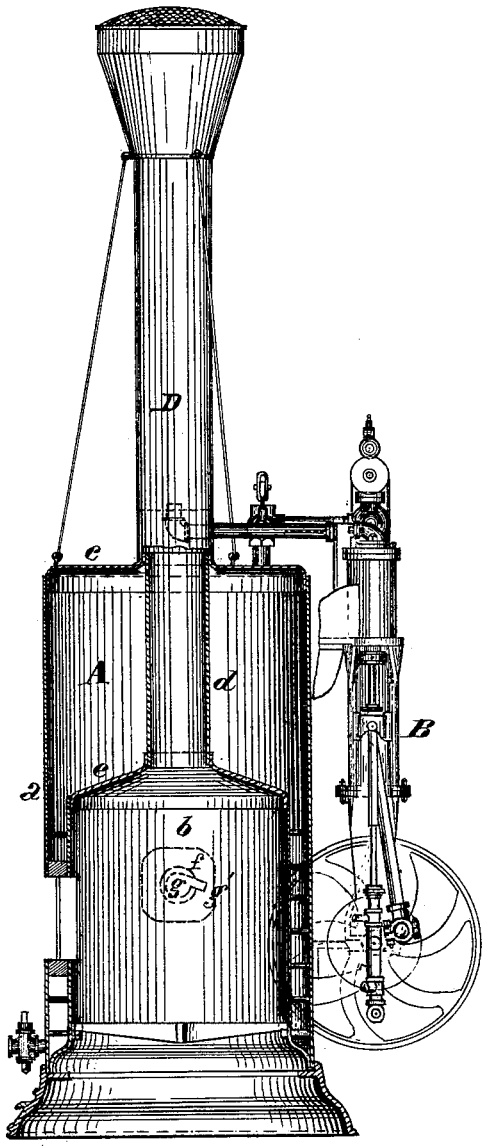
2 Sheets—Sheet 1.

W. D. ALFORD.

Portable-Engine Truck.

No. 206,759. Patented Aug. 6, 1878.

Fig. 1



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2 Sheets—Sheet 2.

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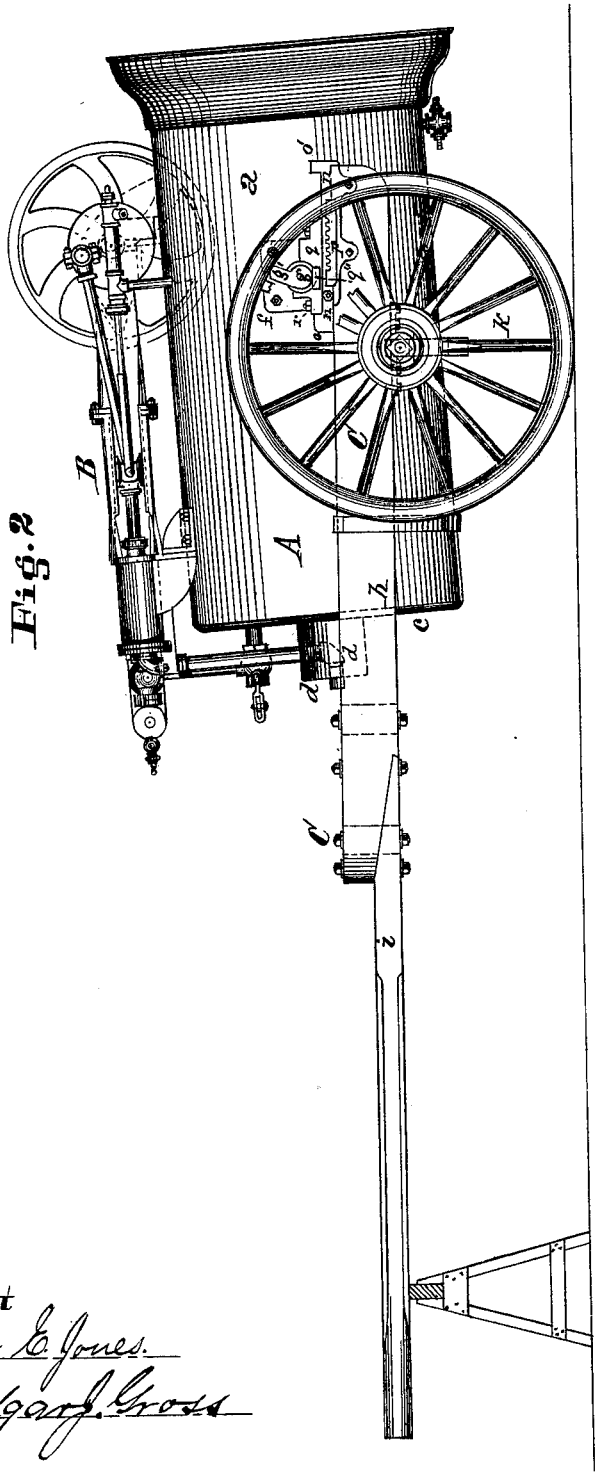

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UNITED STATES PATENT OFFICE.

WILLIAM D. ALFORD, OF CINCINNATI, OHIO.

IMPROVEMENT IN PORTABLE-ENGINE TRUCKS.

Specification forming part of Letters Patent No. **206,759**, dated August 6, 1878; application filed February 23, 1877.

To all whom it may concern:

Be it known that I, WILLIAM D. ALFORD, of Cincinnati, Hamilton county, State of Ohio, have invented an Improvement in Portable Engines, of which the following is a specification:

The invention consists of a suitably-constructed carriage and a combined engine and boiler, detachably journaled thereon in such a manner that said combined engine and boiler can be wholly detached from the carriage and worked standing on the ground in a vertical position, and again readily mounted on the carriage and transported thereby in a horizontal position; also in the provision of adjustable bearings for shifting the portable engine on the carriage after it has been mounted thereon, so that the center of gravity may fall at the most favorable point.

In the accompanying drawings, Figure 1 is a sectional view of a portable engine and boiler embodying my improvements and in position for operation. Fig. 2 is an elevation exhibiting the engine upon its cart-frame ready for conveyance to other localities.

My improvements are designed to be applied to the class of machines known as "vertical combined engines and boilers." A represents the boiler, and B the engine.

I do not claim that the engine has any important features of novelty, and any construction of engine may be substituted therefor.

The boiler is composed alone of the cylindrical shell *a*, cylindrical fire-box *b*, head *c*, smoke-flue *d*, and conical crown-sheet *e*, connected together substantially in the manner shown. The crown-sheet is without flues, has an undisturbed extent of heating-surface, and, being smooth on its upper side and unoccupied by flues, is not adapted to collect quantities of dirt and lime. Being sloping also as well as without flues, whatever scale accumulates on its surface is cracked off and freely discharged by the movement of the plate under changes of temperature.

It is believed that this simple form of boiler possesses every advantage desirable for operation on farms and other places where inexperienced hands are alone to be depended on.

Two plates, *f f'*, are affixed to opposite sides of the boiler, having projecting trunnions *g*, provided with side flanges or ears *g'*, the ears occupying a nearly-horizontal position, as shown in Fig. 1, when the engine is in operation. These trunnions and ears, as will be hereinafter explained, are provided to enable the engine to be lifted and carted away in a horizontal position.

C represents a cart-truck consisting of frame *h*, tongue *i*, and wheels *k*. The wheels are fitted to an axle, *l*, which is curved downward to follow the curvature of the boiler, and the frame has at its forward end a bent strap, *m*, from side to side, on which the boiler rests at its front end, as shown in Fig. 2. At the rear end of the frame, on each side, a saddle, *n*, is fitted, which is provided with ribs *o o'* at the ends, and side racks *p*, and between the ribs *o* on this saddle a journal-bearing, *q*, is fitted to slide by means of bolts *r* passing through slots in saddle *n*. These bearings receive and sustain the journals or trunnions *g* of the boiler, and the trunnions turn in the bearings until the ears *g'* rest against the top face *q'* of the bearings, or in the other direction until the boiler A rests on the yoke *m*. The rack *p* is designed to permit successive fulcruming of a lever, which can be used to press against a projecting lug, *q''*, on bearing *q*, for the purpose of forcing the latter from the back to the forward end of the saddle. The chimney D is detachable, and is removed, as shown in Fig. 2, when the engine is to be carted away.

When it is necessary to remove the engine the truck is backed up until the trunnions *g* are in the bearings *q*. The bearings are then against the rearmost ribs *o'* of the saddle, so as to give leverage for lifting purposes. The tongue is then depressed and the engine thereby lifted bodily, the ears *g'* preventing any tilting of the engine backward. When the tongue is lowered to the proper position it will be found that the engine is journaled at a point too far in the rear of the axle of the wheel for convenient cartage, so I then take a small pinch-bar and, by means of the racks *p* and lugs *q''*, move the bearings forward until they occupy a position against the forward ribs *o* of the saddle, as seen in Fig. 2. The bolts *r* may then be tightened up, and the engine is ready for transportation.

I claim—

1. The combination, substantially as specified, of a trunnioned combined boiler and en-

gine, a carriage therefor, bearings on the carriage for said trunnions, and the means for raising and lowering such bearings, so that the combined boiler and engine may be lifted and turned into a horizontal position for transportation, and may also be set down in a vertical position on the ground when it is to be worked.

2. The truck having a pivoted frame the side sills of which are disconnected at one end, and bearings mounted on said disconnected ends of the side sills, substantially as described, whereby the truck is adapted to engage trunnions on a combined engine and boiler, to lift the same for carrying it.

3. The truck-frame provided with the adjustable bearings for the trunnions of the boiler, and means for shifting said bearings after the portable engine has been mounted on the truck, as and for the purpose specified.

In testimony of which invention I hereunto set my hand.

WILLIAM D. ALFORD.

Witnesses:
J. L. WARTMANN,
JOHN E. JONES.