(No Model.) 2 Sheets—Sheet 1.

F. PLUMB.

TWIN CYLINDER SINGLE ACTING ENGINE.

No. 336,743. Patented Feb. 23, 1886.

Fig. 4

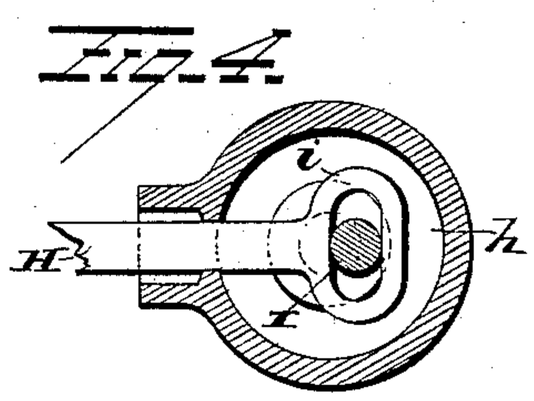

Fig. 1.

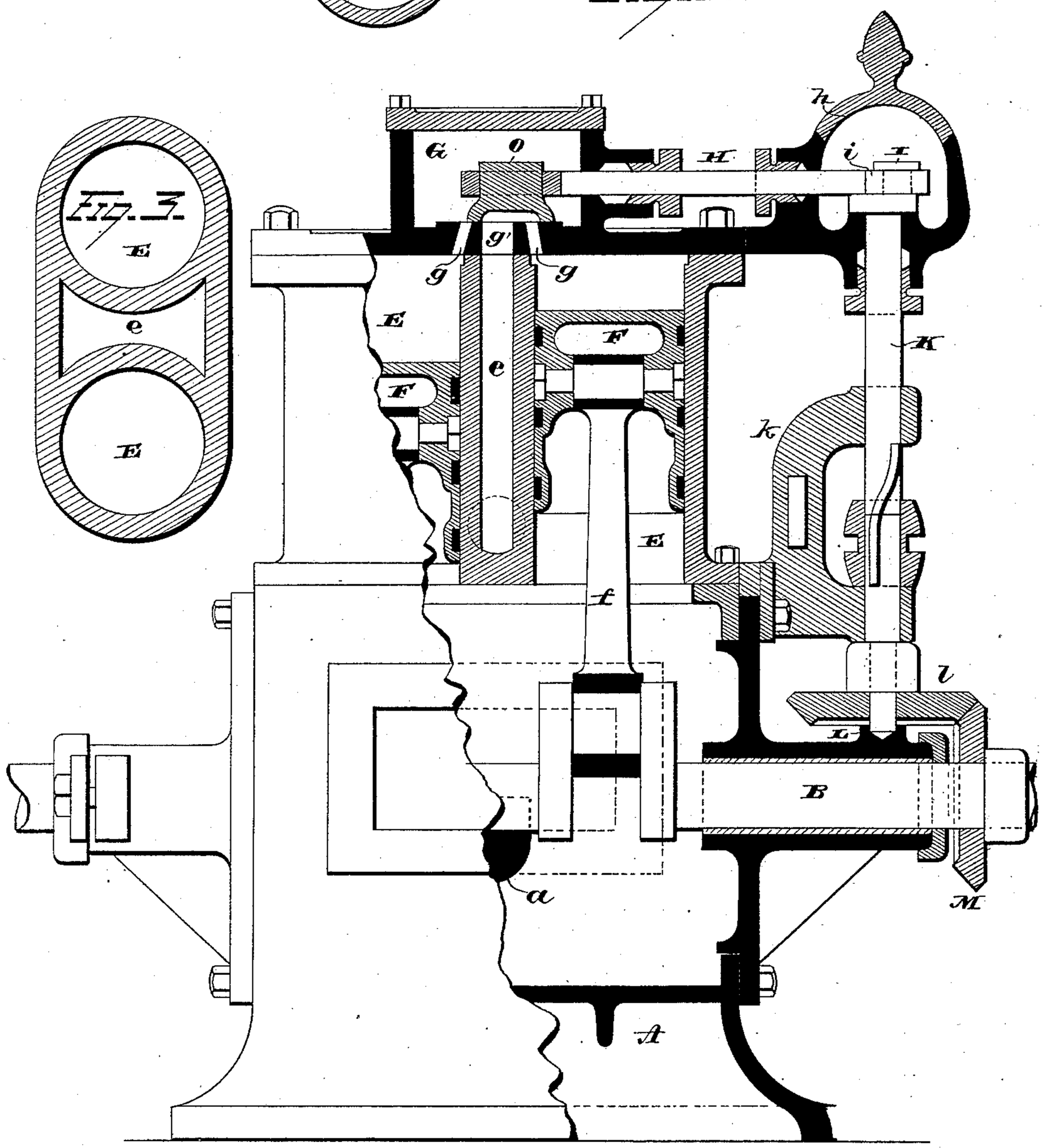

Fig. 3.

WITNESSES

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(No Model.) 2 Sheets—Sheet 2.

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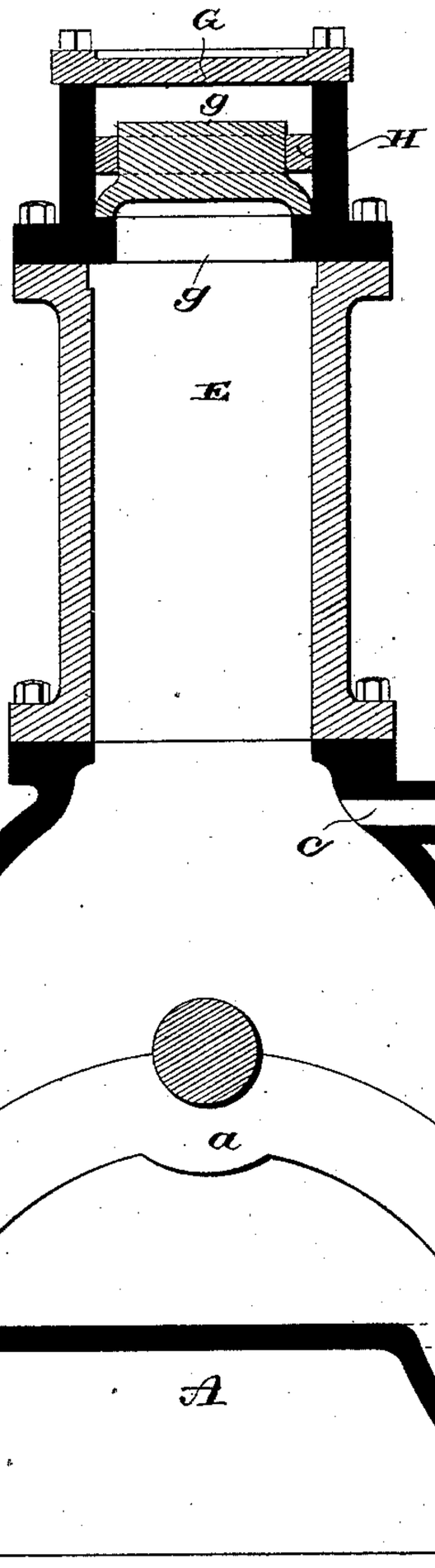
No. 336,743. Patented Feb. 23, 1886.

Fig. 2.



WITNESSES

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UNITED STATES PATENT OFFICE.

FAWCETT PLUMB, OF STREATOR, ILLINOIS, ASSIGNOR OF ONE-HALF TO ALBERT BOWN, OF SAME PLACE.

TWIN-CYLINDER SINGLE-ACTING ENGINE.

SPECIFICATION forming part of Letters Patent No. 336,743, dated February 23, 1886.

Application filed December 11, 1885. Serial No. 185,392. (No model.)

To all whom it may concern:

Be it known that I, FAWCETT PLUMB, of Streator, in the county of La Salle and State of Illinois, have invented certain new and useful Improvements in Twin-Cylinder Single-Acting Engines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in twin-cylinder single-acting engines.

The object is to provide a more compact, simple, and perfect valve movement and gear in connection with an engine of the above character, and to further provide an oil or water reservoir of improved construction in connection with the hollow liquid-tight base of the engine.

With these ends in view my invention consists in certain features of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view of the engine in side elevation, partly in section. Fig. 2 is a transverse vertical section through one of the cylinders. Fig. 3 is a horizontal section through the cylinders, and Fig. 4 is a horizontal section through the oil-cup in which the valve-operating shaft connects with the valve-operating rod.

A represents the base of the engine, which is constructed hollow and provided with one or more arch-shaped cross-girders, *a*, to support and steady the main shaft B. A tower or reservoir, C, is located near the base of the tank, conveniently formed integral therewith and adapted to hold a supply of oil or water, or oil and water combined, and to feed the same into the hollow base through passages *c* and *c'*, located at or near the top of the tower and at its base, respectively. The tower or reservoir C is further provided with a discharge-opening, D, located a short distance above the base, for convenience in drawing the oil or water off and keeping it at the proper level. The top *d* of the tower or reservoir is removable, to admit of the reservoir being replenished. The main shaft B extends longitudinally through the hollow base, and has bearings in the ends of the base and in such arch-support as may be introduced to keep it steady. The cylinders E are set upright on the base, communicating with the chamber in the base, and are located a short distance apart, to admit of a common exhaust-chamber, *e*, between the two. The pistons F, which work in the cylinders E, are connected with cranks on the main shaft by rods *f*.

G is the steam-chest. It is located on the tops of the two cylinders over the exhaust *e*, and communicates with the cylinders through the steam-ports *g*, and with the exhaust-chamber through the exhaust-port *g'*. A slide cut-off valve, O, of ordinary construction, is adapted to open the ports *g* alternately to the steam-chest and exhaust-chamber. The steam acts on the upper sides only of the pistons. The valve-operating rod H extends through suitable bearings in the end of the steam-chest, and thence parallel with the main shaft into an oil-receptacle, *h*, where it is connected with the wrist-pin of a crank, I, by means of a yoke, *i*. The latter allows the wrist-pin to play laterally a distance equal to the diameter of its stroke, but admits of no longitudinal play. The crank I is secured to the upper end of a vertical shaft, K, journaled in suitable bearings formed in the ends of a bracket-support, *k*, and in the bottom of the oil-receptacle *h*, and on a projecting sleeve, L, in which the main shaft is journaled. At or near its lower end the shaft K is provided with a bevel gear-wheel, *l*, which meshes with a similar bevel gear-wheel, M, secured on the main shaft. Thus each revolution of the main shaft causes the valve O to complete an advance and return stroke, and because of the means employed in communicating the motion of the main shaft to the valve there is very little, if any, lost motion, and the location of the valve-operating gear is such as to render the engine as a whole very compact and simple.

I am aware that the main features of the engine herein-above described are old; but the construction and location of the valve-operating gear and the oil-supply tower or reservoir, as constructed and arranged, are the features which form the gist of my present invention, and add materially to the completeness and economy of the engine.

Having fully described my invention, what I

claim as new, and desire to secure by Letters Patent, is—

1. The combination, with a base, the main shaft journaled therein, cylinders, and a steam-chest communicating with the cylinders, of a valve, a valve-operating rod, the upright shaft connecting the main shaft and valve-rod, and an oil-receptacle encircling the meeting ends of the valve-rod and upright shaft, substantially as set forth.

2. The combination, with the hollow base, the main shaft journaled therein, the upright twin cylinders set thereon, and the steam-chest located on their upper ends, of the valve, the valve-operating rod, and the upright connecting-shaft, the valve-operating rod and upright shaft being connected within an oil-receptacle by means of a yoke and crank, and the upright shaft and main shaft being connected by bevel-gear, substantially as set forth.

3. The combination, with the hollow base adapted to form an oil or water receptacle, of an oil or water supply tower or reservoir, communicating with the base and provided with a waste-orifice, substantially as set forth.

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

FAWCETT PLUMB.

Witnesses:

A. BOWN,

GEORGE GOULDING.