(No Model.)

F. R. FENNESSY.

OIL SUPPLY TANK.

No. 558,643. Patented Apr. 21, 1896.

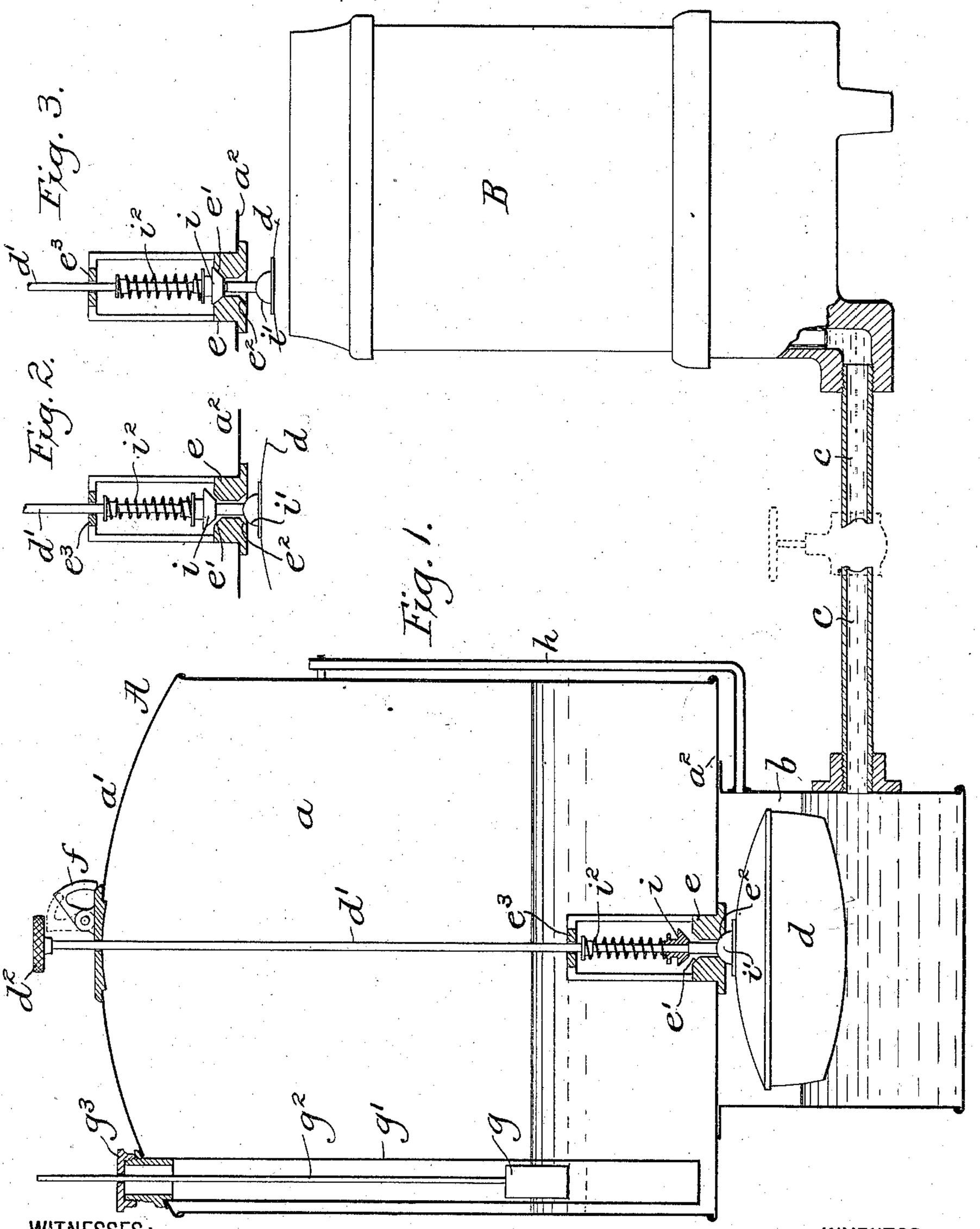

Fig. 1.

Fig. 3.

Fig. 2.

WITNESSES:

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OIL-SUPPLY TANK.

SPECIFICATION forming part of Letters Patent No. 558,643, dated April 21, 1896.

Application filed December 18, 1894. Serial No. 532,246. (No model.)

To all whom it may concern:

Be it known that I, FRANK R. FENNESSY, a citizen of the United States of America, residing in the city, county, and State of New York, have invented certain new and useful Improvements in Oil-Supply Tanks, of which the following is a specification.

The present invention relates generally to means for automatically feeding a proper quantity of oil to oil-burners; and it consists in the novel features hereinafter fully set forth.

The improved oil-supply tank is adapted to be connected to any suitable oil-burner, and is particularly designed to insure a given quantity of oil being preserved at the burner, and thus cause the flame to burn steadily and with economy of oil, and to provide for a slight over-supply of oil to effect a speedy saturation of the wick or a quick lighting of the oil when it is first ignited.

As a better understanding of the improvement will be had from a detailed description thereof, such description will now be given, reference being had to the accompanying drawings, in which—

Figure 1 is a sectional elevation of the oil-supply tank and the oil-burner with which it may be used. Figs. 2 and 3 are detail sections of the valves and valve-seats in different positions.

The improved oil-supply tank A consists in the main of a reservoir a for containing a quantity of oil or other burning-fluid and a supply-chamber b, adapted to receive, preferably, a smaller quantity of oil and having a connection, such as a pipe c, with any suitable burner B. The reservoir a is provided with a closed cover a', and its bottom forms the partition or division separating it from the chamber b. In the chamber b is located a float d of suitable material and proper dimensions, preferably of sheet metal and hollow, and slightly smaller than the width of the chamber, so that when such float is raised or lowered from or into the oil in said chamber it will more or less materially affect the height of the fluid therein, and consequently that in the burner B. The float d is provided with means for depressing it, and to this end may be connected rigidly to a stem d', rising vertically through an opening in the bottom a^2 of the reservoir a up through the reservoir and through an opening in its cover a', having at its upper end a grasping-piece or knob d^2 for convenience of moving the stem and float by hand from the exterior of the supply-tank. The bottom a^2 of the reservoir supports a casting e, having a central opening through which the stem d' extends, the upper and lower faces of the casting being formed with valve-seats e' e^2, respectively, against which valves i i' on the stem d' are adapted at certain times to seat. From the valve-casting e there rises an open frame supporting at its upper end a cross-piece e^3, through a perforation in which the stem d' extends and is guided and steadied thereby, aided by the cover a', as before described.

The valve i is mounted loosely on the stem d', so as to have vertical movement on the stem against the pressure of a spring i^2, tending to hold the valve i against a shoulder formed on the stem.

The cover a' of the supply-tank carries a movable latch f, pivoted to the cover and adapted to be moved upward, as indicated by dotted lines, to underlie the knob d^2 of the stem, and thus form a temporary support for the stem and float sustaining them in such position that the valve i is held from seating on the valve-seat e', as in the position shown in Fig. 1.

The supply-tank may have a gage to show the height of fluid in the reservoir a, such as a float-gage g, guided in an open tube g', extending from the cover down into the reservoir to a point near its bottom, and having a vertical stem g^2, extending through a removable screw-cap g^3, the height of the top of the stem above the cap indicating the quantity of oil or other fluid in the reservoir. The screw-cap g^3 may close a filling-orifice for supplying the reservoir with a proper quantity of oil or other fluid when occasion may require.

The chamber b may communicate with an air-pipe h, extending above the level of the fluid in the reservoir a.

In the use of the improved supply-tank the operation is as follows: To fill the supply-tank, the stem and float d should be raised

and the latch *f* moved to underlie the knob d^2 of the stem, and thus hold the valve *i* from its seat *e'*, as in Fig. 2, which at the same time holds the valve *i'* a short distance below its seat e^2, so that a free passage for the oil is formed from the reservoir *a* into the chamber *b*. The oil or other fluid may now be supplied to the reservoir by removing the cap g^3 or other cap controlling a filling-orifice. As the fluid passes into the reservoir *a* a quantity will also flow past the valves *i i'* into the chamber *b*, the air being displaced passing outward through the pipe *h*, and will continue to enter the chamber *b* until the float *d* and its stem *d'* are raised sufficiently to cause the valve *i'* to seat against its seat e^2, and thus stop a further accumulation of oil in said chamber, as indicated in Fig. 1. When the stem *d'* is thus raised by the accumulation of oil in the chamber *b*, its knob d^2 will be raised from contact with the latch *f*, which is so connected that it will fall by gravity away from supporting position, as in full lines in Fig. 1. The fluid will continue to be fed until the desired quantity is supplied to the reservoir *a*. The connection between the chamber *b* and the burner B is such that the fluid will rise to the same level in both. When the burner is in use consuming the oil supplied from the chamber *b*, the oil in the latter and in the burner will gradually lower, so that the float *d* lowers, removing the valve *i'* from seating position, as in Fig. 2, and thus allowing additional oil to flow from the reservoir *a* into the chamber, refilling it as before and again raising the float, so that the valve *i'* in seating prevents further supply of oil to the chamber *b*.

In starting the ignition at the burner it is preferable to provide an excess of oil, so that the wick will be thoroughly saturated, and for this purpose the float *d* through its stem may be pushed downward in the chamber *b*, causing a portion of the oil thus displaced to rise in the burner. In this movement of the float the upper valve *i* will be seated, and being yieldingly mounted on the stem *d'* will allow the stem to move independent thereof, as in Fig. 3. The float thus acts not only as a controlling-float to continuously regulate the supply to the burner, but also as a flooding-float to preliminarily saturate the wicks.

In practice a suitable cut-off valve may be located in the pipe *c*. A form of valve suitable for use with burners having mineral or similar wicks, and in which the usual wick raising and lowering device is dispensed with, is set forth in another application filed by me.

What is claimed is—

1. The combination with the reservoir for a burner, of a supply-chamber having a communication with the reservoir, a combined controlling and flooding float in the latter, a controlling-valve connected with the float and acting on the upward movement of the latter to close said communication, a second valve connected with the float and acting on the depression thereof to close said communication, and means for depressing the float to flood the wicks of the burner.

2. The combination with a reservoir for a burner, of a supply-chamber having a communication with the reservoir, a combined controlling and flooding float in the latter, a controlling-valve connected with the float and acting on the upward movement of the latter to close said communication, a second valve having a sliding or yielding connection with the float and acting on the depression thereof to close said communication and permit a further depression of the float, and means for depressing the float.

3. The combination with the reservoir for a burner, of a supply-chamber having a communication with the reservoir, a depressible float in the latter, a valve connected with the float and acting on the depression of the float to close said communication, a spring controlling the latter valve relative to the float and means for closing the communication when the float is raised.

4. The combination with the reservoir for a burner, of a supply-chamber having a communication with the reservoir, a depressible float in the latter, a valve having a sliding or yielding connection with the float and acting on the depression of the latter to close said communication and permit a further depression of the float, and means for closing said communication when the float is raised.

5. The combination with the reservoir for a burner, of a supply-chamber having a communication with the reservoir, a controlling-valve and a second valve respectively below and above said communication, and connected with the float, means for depressing the float, and a latch for holding the float in an intermediate position with both valves open.

In witness whereof I have hereunto signed my name in the presence of two witnesses.

FRANK R. FENNESSY.

Witnesses:
GEO. H. GRAHAM,
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