(No Model.)

A. D. LOVEREN.

VAPOR STOVE.

No. 360,601. Patented Apr. 5, 1887.

Fig. 2.

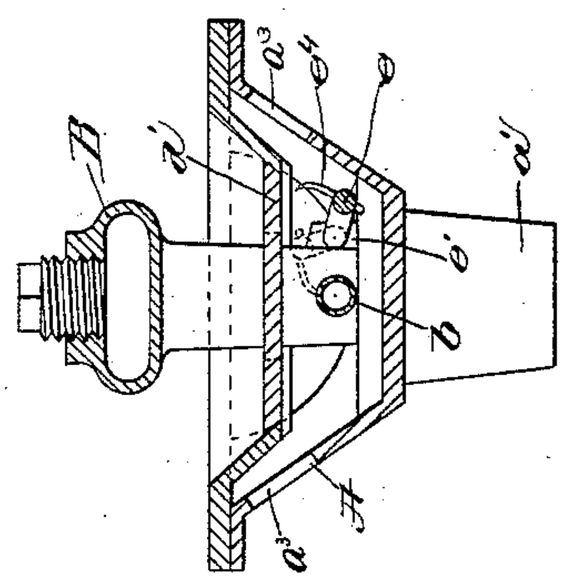


Fig. 1.

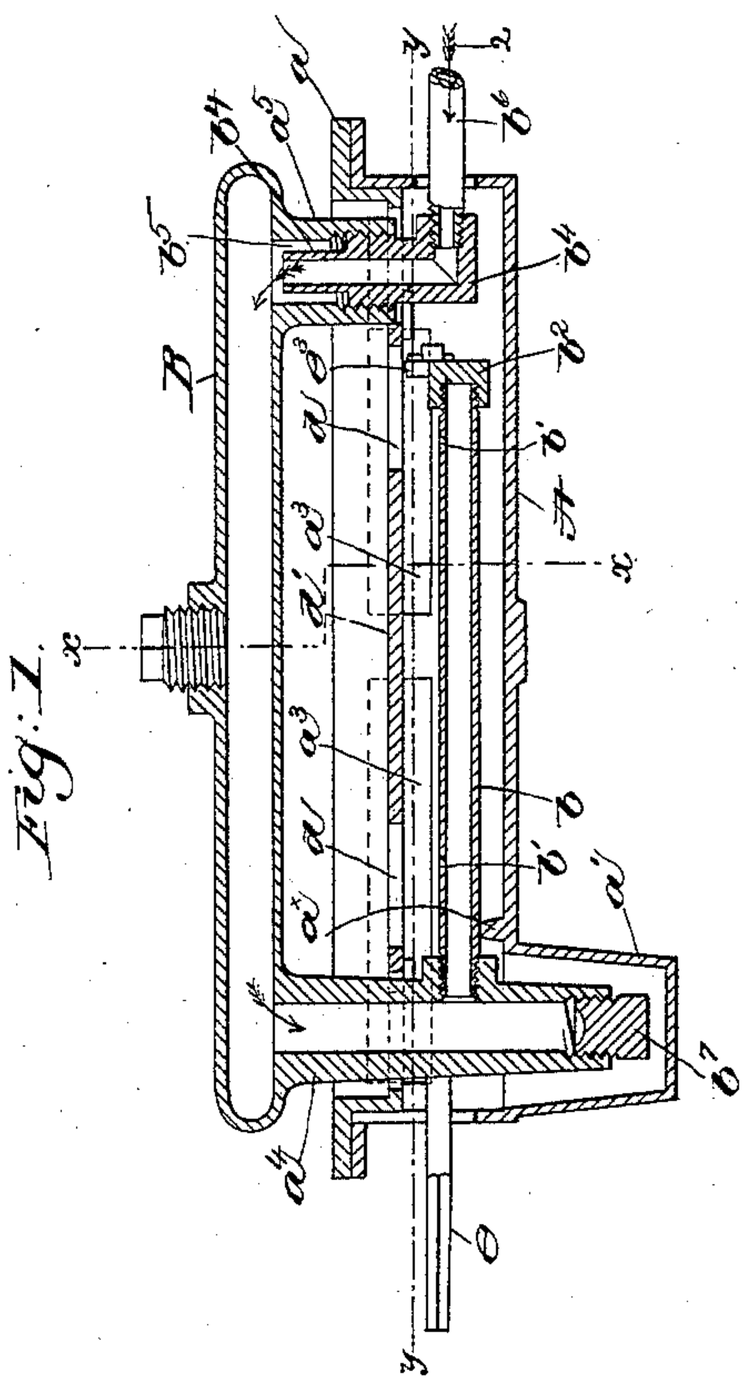


Fig. 4.

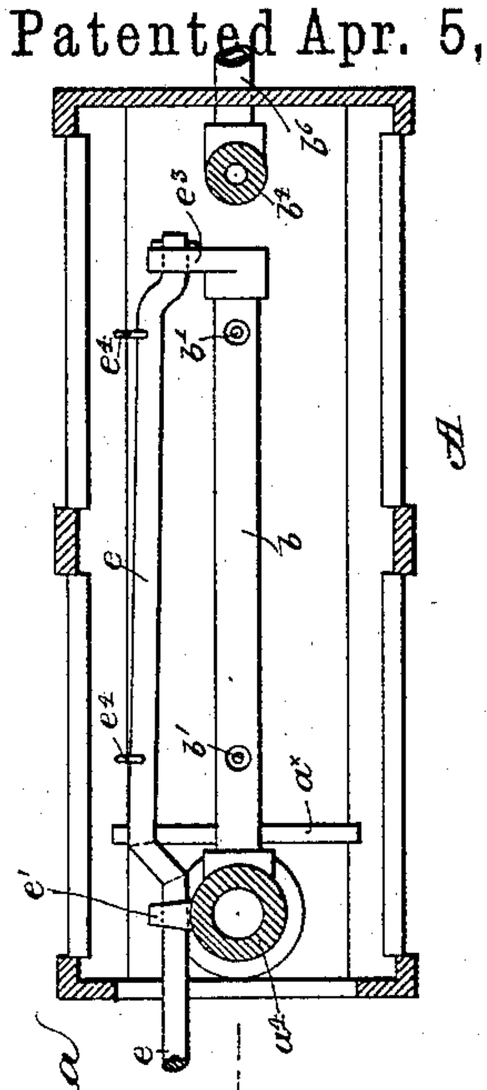
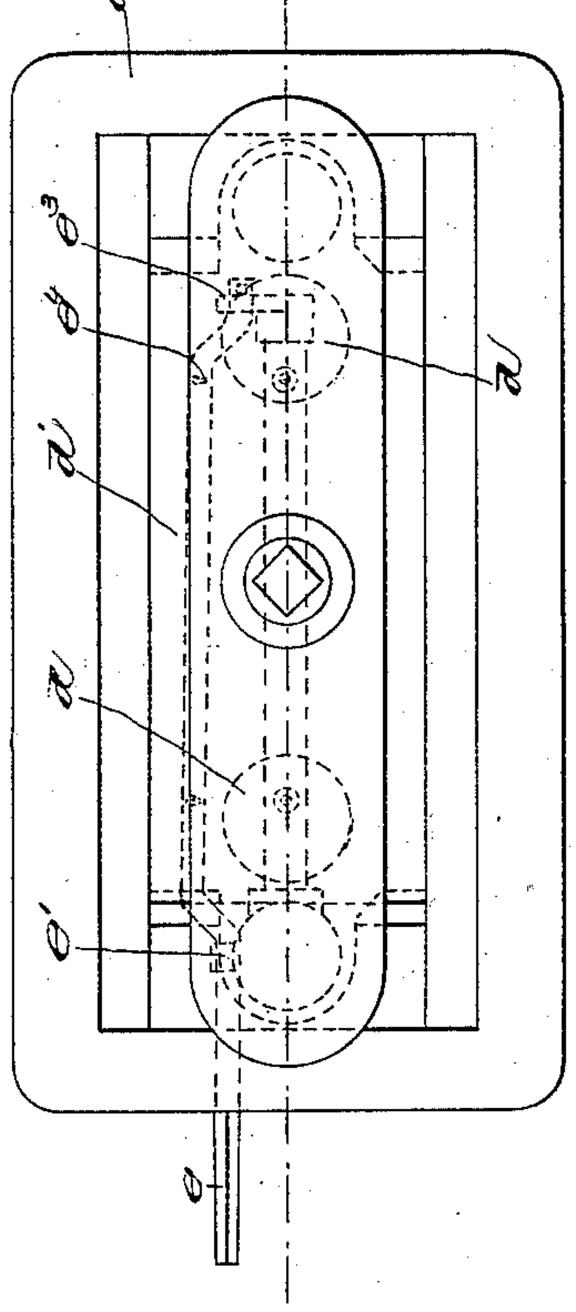


Fig. 3.



Witnesses
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UNITED STATES PATENT OFFICE.

ARTHUR D. LOVEREN, OF WEST SOMERVILLE, ASSIGNOR TO THOMAS GOGIN AND CHARLES E. BURBANK, OF BOSTON, AND OLIVER P. PRALL AND ARTHUR D. LOVEREN, OF SOMERVILLE, MASSACHUSETTS, TRUSTEES.

VAPOR-STOVE.

SPECIFICATION forming part of Letters Patent No. 360,601, dated April 5, 1887.

Application filed July 23, 1886. Serial No. 208,836. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR D. LOVEREN, of West Somerville, county of Middlesex, and State of Massachusetts, have invented an Improvement in Vapor-Stoves, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

My invention has for its object to improve and simplify the construction of that class of stoves or vapor-generators in which hydrocarbon and other oils may be vaporized.

The features of my invention will be pointed out in the claims at the end of this specification.

Figure 1 is a longitudinal vertical section through the fire-pot of an oil-stove constructed in accordance with my invention; Fig. 2, a transverse section on line *x x;* Fig. 3, a plan or top view of Fig. 1; and Fig. 4 is a horizontal section in the plane of line *y y*, Fig. 1.

The fire-pot A, having the usual deflecting-plate, *a*, resting thereon, is provided at one end with a depending leg, *a'*, and with air flues or passages a^3 in its sides. (See dotted lines, Fig. 1.) Within the fire-pot A is located a hollow cast-metal one-piece retort or vapor-chamber, B, provided at its ends with hollow legs a^4 a^5, of considerable area in cross-section, the leg a^4 extending into the leg *a'* of the fire-pot. The leg a^4 is tapped on one side, to receive one end of a pipe, *b*, provided with perforations *b'*, the other end of the pipe *b* being herein shown as closed by a cap, b^2, the said perforated pipe communicating with the interior of the leg a^4, and constituting the burner of the stove or vapor-generator.

The retort B is herein shown as supported in the fire-pot by the pipe *b*, which rests upon the lug $a^\times$ on the bottom of the said fire-pot.

The leg a^5 is screw-threaded to receive a hollow plug or pipe, b^4, which is reduced in diameter near its upper end to form a pocket, b^5, (see Fig. 1,) the other end of the said plug or pipe being connected to a pipe, b^6, (herein shown as extended through the end of the fire-pot A,) the pipe b^6 communicating with the oil or hydrocarbon supply source, and constituting the oil-feed pipe for the stove or vapor-generator.

The hydrocarbon or oil enters the pipe b^6, as indicated by arrow 2, Fig. 1, rises in the plug or pipe b^4, and after filling the pocket b^5 it flows into the retort or vapor-chamber B, it flowing therefrom into the leg a^4, closed at its lower end by a plug, b^7, rising in said leg until it arrives on a level with the pipe *b*, into which it flows. The oil fills the pipe *b*, and is ignited as it flows through the perforations *b'*, (herein shown as two in number,) and the flame thus created above the pipe *b* is preferably caused to pass through openings *d* (see Figs. 1 and 3) in a plate, *d'*, supported by the deflecting-plate *a*, as shown in Fig. 2. The flame, as it issues through the openings *d*, impinges upon the outside of the retort B, raising it to a heat sufficient to vaporize the oil contained therein. After the apparatus has been in operation a short time, the heat generated thereby causes the oil to be vaporized as it leaves the plug or pipe b^4. As the oil is thus vaporized, the residuum thereof falls into the pocket b^5, from whence it can be easily removed by unscrewing the plug or pipe b^4. The scale or deposit which forms on the inside of the retort, and which from time to time falls upon the lower side or bottom thereof, is washed or carried along by the oil first fed therein, the said oil carrying the said scale or deposit into the leg a^4, wherein it is deposited below the mouth of the pipe *b*, and from whence it can be removed by unscrewing the plug b^7.

The retort B, being connected to only one end of the pipe *b*, is permitted to expand and contract as it is heated and cooled without in the least destroying the connections between it and the burner-pipe *b*. The oil-feed or supply pipe, being connected to the retort B, near one end, and being thus removed from the intense action of the heat, is freed from danger of becoming clogged or stopped up.

The passages a^3, for the admission of air to the burner, are so located in the sides of the fire-pot (see dotted lines, Fig. 1) as to direct the air below the plate *d'*, so that a more complete combustion takes place, the flame issuing

through the openings *d* being substantially free from smoke, soot, &c.

To enable the perforations *b'* of the burner-pipe to be freed, if at any time they should become clogged, I have herein shown a rod, *e*, extended through a lug, *e'*, on the leg a^4, and supported at one end by a lug, e^3, on the cap b^2, (see dotted lines, Fig. 3,) as provided with teeth or projections e^4, (see Fig. 2,) the points of the said teeth entering the perforations *b'* of the pipe *b*, thus freeing the same from any residue when the rod *e* is turned from its full into its dotted-line position. (Shown in Fig. 2.)

By providing the pocket b^5 at one end of the retort for the reception of the oil residuum and the pocket in the leg a^4 at the opposite end of the retort for the reception of scale, sand, or other material on the inside of the retort B, the generating capacity and heating-surface on the inside of said retort are maintained substantially constant, thus prolonging the life or usefulness of the retort as a generator.

I claim—

1. In an oil-stove or vapor-generator, a cast-metal one-piece retort or vapor-chamber having depending legs at its ends, and the plug or pipe b^4, fitted into but one of said legs and having one end of smaller diameter than the leg, and projecting up freely into said leg to form a pocket between the said smaller end and the said leg, the said plug or pipe communicating with the oil-supply pipe, combined with a burner-pipe connected to the other of said legs, substantially as described.

2. In an oil-stove or vapor-generator, a cast-metal one-piece retort or vapor chamber having legs a^4 a^5, and an oil-supply pipe communicating with the leg a^5, combined with a burner-pipe connected to the leg a^4 above its end, so as to form a pocket in the said leg below the burner-pipe, as and for the purpose set forth.

3. In an oil-stove or vapor-generator, a cast-metal one-piece retort or vapor-chamber having legs at its ends, and an oil-supply or feed-pipe communicating with one of said legs, combined with a perforated burner-pipe connected to the other of said legs, and with the rod *e*, provided with teeth or projections, the said rod being adapted to be turned to place the said teeth or projections in the perforations of said burner-pipe to free the same, substantially as described.

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

ARTHUR D. LOVEREN.

Witnesses:

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