

(No Model.)

J. E. STEPHENS.

LAMP STOVE.

No. 327,613.

Patented Oct. 6, 1885.

Fig. 1

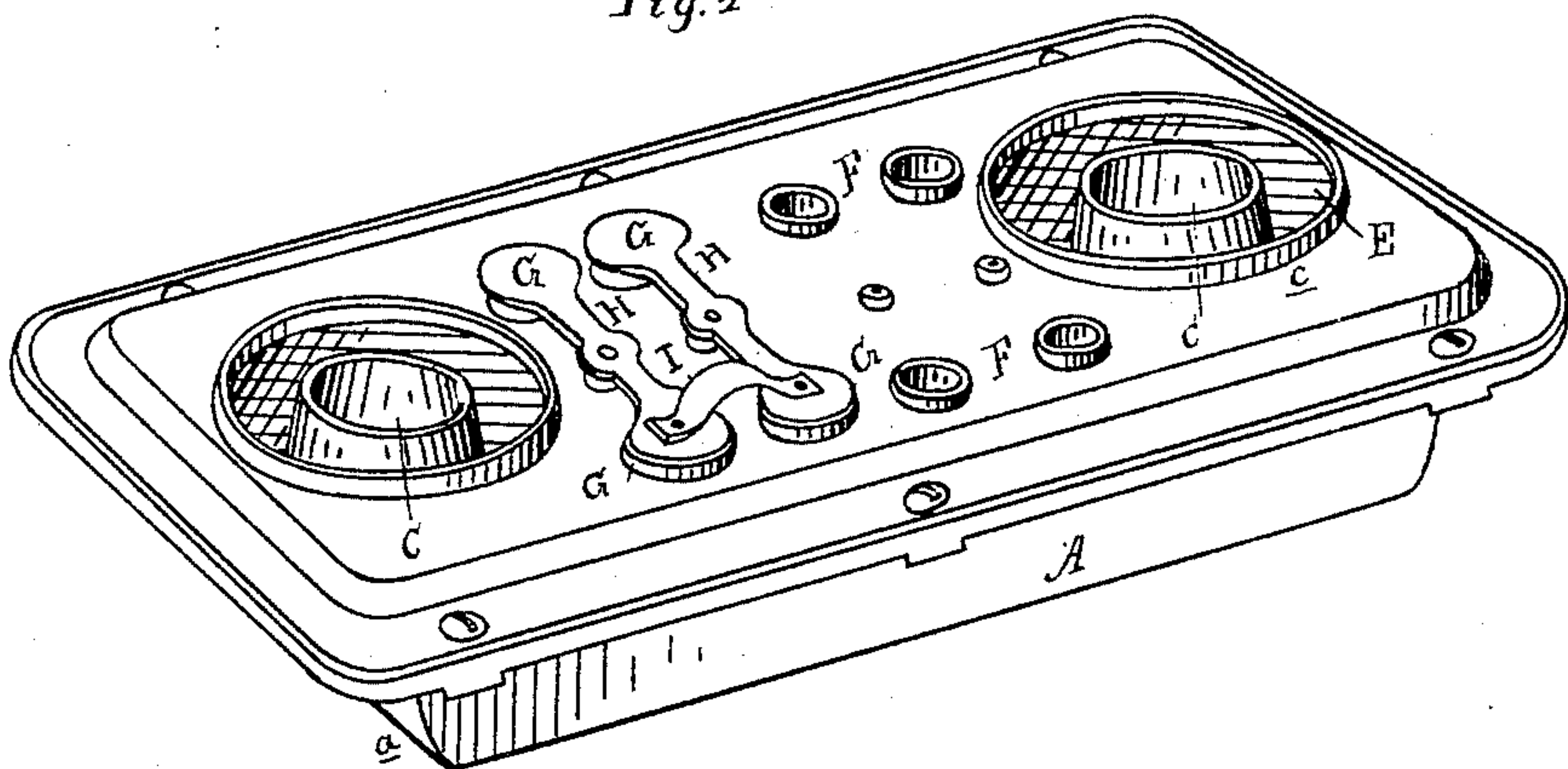
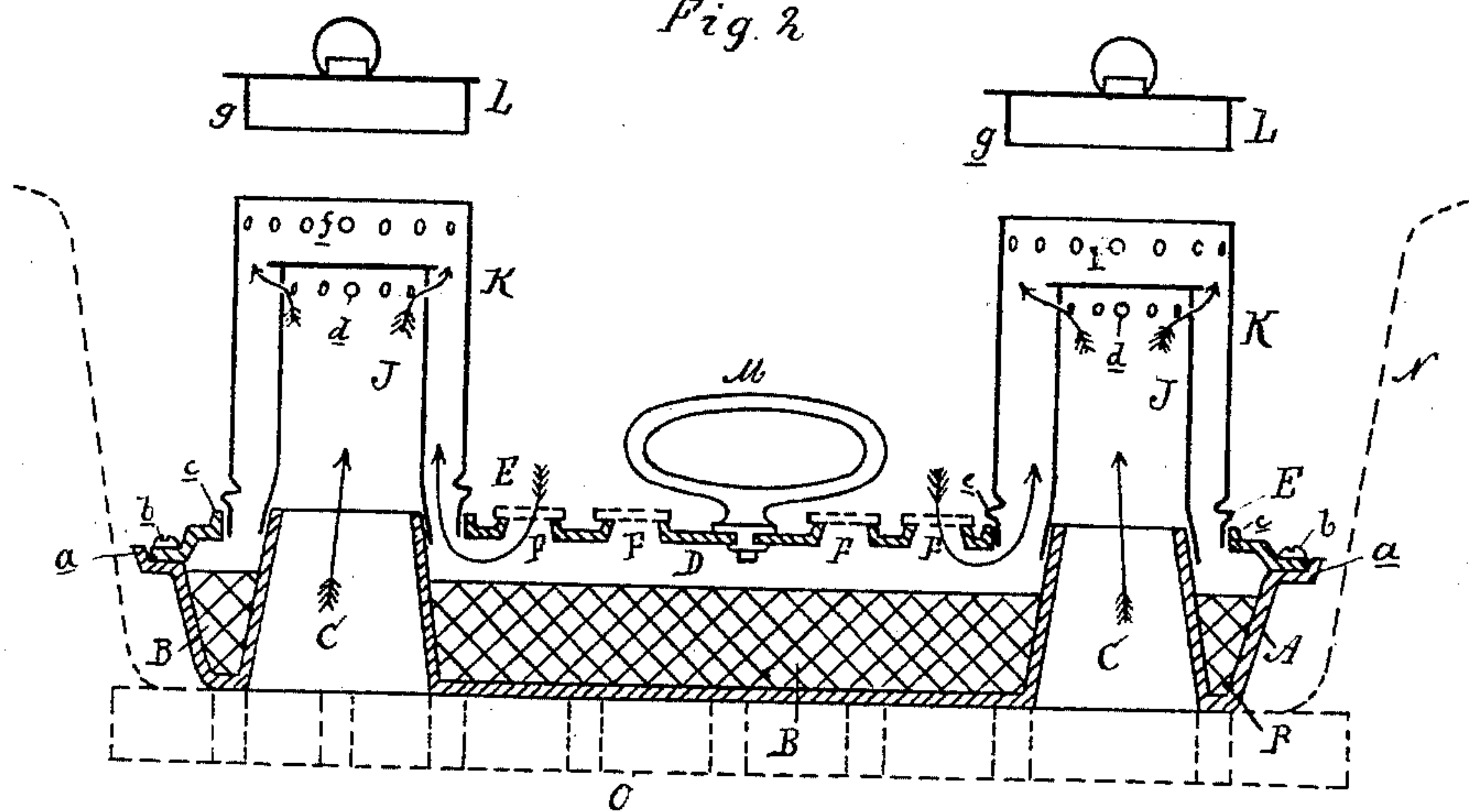


Fig. 2



Attest.
John Schumann.
Sg. Mayor

Inventor:
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UNITED STATES PATENT OFFICE.

JOHN E. STEPHENS, OF DETROIT, MICHIGAN.

LAMP-STOVE.

SPECIFICATION forming part of Letters Patent No. 327,613, dated October 6, 1885.

Application filed September 10, 1884. Serial No. 142,643. (No model.)

To all whom it may concern:

Be it known that I, JOHN E. STEPHENS, of Detroit, in the county of Wayne and State of Michigan, have invented new and useful Improvements in Lamp-Stoves; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to certain new and useful improvements in the construction and operation of lamp-stoves; and it is especially designed as an improvement upon a lamp-stove for which Letters Patent No. 286,862 were issued to me bearing date October 16, 1883.

The invention consists in certain important changes made from the old construction, as described in that patent, by means of which a more perfect control of the combustion is obtained and a much more successfully-operating device secured; and hence the invention consists in the peculiar construction of the parts and their combinations and arrangement, as more fully hereinafter described.

Figure 1 is a perspective view of my improved device with the flame-concentrators and draft-flues removed. Fig. 2 is a central longitudinal vertical section through the same, showing the draft-flues and concentrators in place.

In the accompanying drawings, which form a part of this specification, A represents a metallic tank or reservoir the interior of which is filled, or nearly so, with a porous brick, B, made of fire-clay and asbestos; or this space may be filled with any absorbent and non-combustible material which absorbs, as a sponge, the oil poured into the tank. This tank is provided with one or more funnel-shaped tubes, C, preferably cast integral with the tank, opening through the bottom thereof and extending slightly above the plane of its top, for the purposes hereinafter described. The upper edge of this tank terminates in a rest and flange, *a*, and fitting upon such rest and within such flange the cover D is secured by means of screws *b*. One or more circular openings, E, are formed in the cover, surrounded by a collar, *c*, so that when such cover is in place the axis of the flue C and

the opening E will be coincident. Other smaller openings, F, are also formed in the cover, at least one pair of such openings being provided for each burner of the stove; and these openings are adapted to be closed or disclosed by the dampers G, each pair of these dampers being connected together by means of a lever, H, pivotally secured midway between each pair of the openings F, so that the movement of this lever in either direction will simultaneously close or disclose the openings, and where there are more than one pair of such openings for each burner the dampers are connected by means of a cross-bar, I, so that if there are four dampers, as shown in Fig. 1, a like movement will close and disclose the four openings.

J represents draft-flues, preferably made of sheet metal and sleeved upon the top of the flue C, and closed at their top ends, just beneath which there are formed, near the top of these flues J, perforations *d*.

K represent cylindrically-shaped flame-concentrators both ends of which are open, the lower ends being inserted in the openings E in the cover, and resting, by means of the beading *e*, upon such cylinder upon the tops of the collars *c*. Near the top of this concentrator or cylinder K are formed a series of perforations, *f*. L are removable covers provided with flanges *g* of sufficient depth that when such cover is placed upon the cylinder K it not only closes the top thereof, but such flanges close the perforations *f* around its periphery and stop combustion. M is a handle centrally secured to the cover D, and affording facilities for handling the same when the screws by means of which it is secured to the tank are removed.

This device is designed to be set within the fire-box or combustion-chamber of a cooking stove or range, and may be provided with as many burning-points as desired. The device shown in the drawings is provided with two burning-points designed, each one to set when in place immediately below the two boiling-places usually found above such combustion-chamber. Of course, without departing from the spirit of my invention, should the top of such range or stove have four or more boiling-places above the combustion-

chamber, the device itself may be provided with a like number of burning-places; or these may be reduced in number to one and still keep within the scope of the present invention.

In practice, the device being constructed substantially as described, and inserted within the combustion-chamber N of a cook-stove, as shown in dotted lines in Fig. 2, and resting upon the grate O, and the tank having been supplied with oil until the material (non-combustible and absorbent) with which such tank is filled, or nearly so, is thoroughly impregnated, the cover L is removed from the concentrator K, and the openings F partially disclosed. Now, by means of a wire with a bit of wire-gauze at one end and dipped in any combustible liquid and ignited and inserted down through the concentrator K, the oil is ignited and combustion assisted by the air entering through the damper-openings F, the flame being confined within the concentrator and around the flue J. Now, as the flue J becomes warm it causes a draft-current up through the flues C J, which current is divided into smaller currents and passes out to mingle with the products of combustion through the perforations d, and air also is drawn inwardly through the perforations f in the concentrator K, so that a very perfect combustion is secured and the best possible results obtained. The oil may be filled through an opening for the purpose, (not shown,) or through either one of the dampers; or the tank may be connected by means of a pipe with the source of supply at any distance, such supply being regulated, if desired, by any suitable valve.

I am aware of the German patent No. 8,303, dated April 30, 1879, and make no claim to the construction shown therein as forming part of my invention.

What I claim as my invention is—

1. In a lamp or heater having a tank or reservoir and a draft-flue passing upward through such tank, a cylindrical flue surmounting said draft-flue and an outer shell surrounding said cylindrical flue, leaving a space between the same, which forms a combustion-chamber around the inner flue, substantially as and for the purpose specified.

2. In a lamp stove or heater, the combination, with a burner-chamber and a tank or reservoir provided with draft-openings in its cover, and having open connection with the burner-chamber, of dampers arranged to control said openings for the purpose of regulating

the supply of air through the tank to the burner-chamber, substantially as specified.

3. A lamp-stove having a tank with an air-flue passing upward through the same, in combination with the flue J and the shell K, surrounding such flue and forming a combustion-chamber around such flue, and having a series of perforations, f, near the top of such shell, substantially as set forth.

4. In a lamp stove or heater, the combination, with a combustion-chamber provided with a series of perforations, as specified, of a cover, L, having a depending flange of depth sufficient to close the perforations when in use, substantially as and for the purpose specified.

5. In a lamp-stove having a tank or reservoir, a combustion-chamber and a cover having openings therein, in combination with pivoted dampers arranged in pairs and constructed to close or disclose each pair of openings simultaneously, substantially as described.

6. In combination with the fluid-reservoir, a vapor-burner consisting of two concentric cylinders, the inner one having a closed top and forming an air-duct discharging the air circumferentially near its top and near but below the top of the outer cylinder, while the latter conducts the vapor toward the point of discharge of the air from the inner cylinder, whereby a more concentrated ring-flame is obtained, substantially as described.

7. In a vapor-stove, a vapor-burner consisting of two cylinders placed concentrically within each other, the inner cylinder forming an air-flue, which discharges the air circumferentially near its closed top, while the outer cylinder communicates with the vapor-generating chamber and conducts said vapors to the point of discharge of air from the inner cylinder, in combination with an air-passage into the vapor-generating reservoir, and an adjustable draft-flue for conducting the vapor into the outer cylinder, for the purposes of regulating or extinguishing the flame, substantially as described.

8. In a lamp-stove, the tank A, the absorbent and non-combustible brick B, the flue C, cover D, draft-openings F, dampers G, connecting-lever H, perforated flue J, and concentrator K, the parts being constructed, arranged, and operating substantially as and for the purposes set forth.

JOHN E. STEPHENS.

Witnesses:

H. S. SPRAGUE,
CHARLES J. HUNT.