

(No Model.)

3 Sheets—Sheet 1.

J. ROOTS.
OIL LAMP.

No. 384,079.

Patented June 5, 1888.

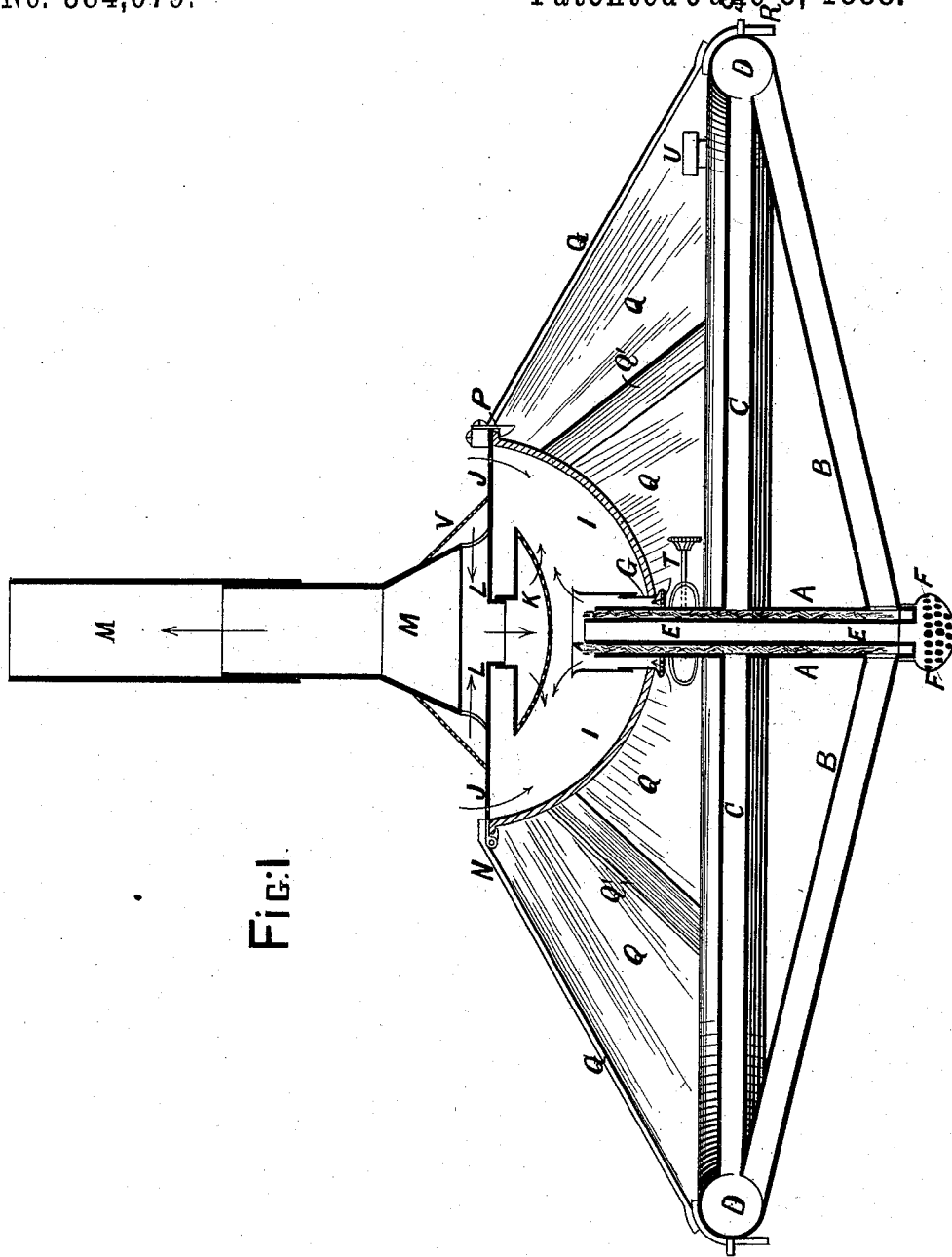


Fig. 1.

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Inventor,
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By James L. Norris
Attorney

(No Model.)

3 Sheets—Sheet 2.

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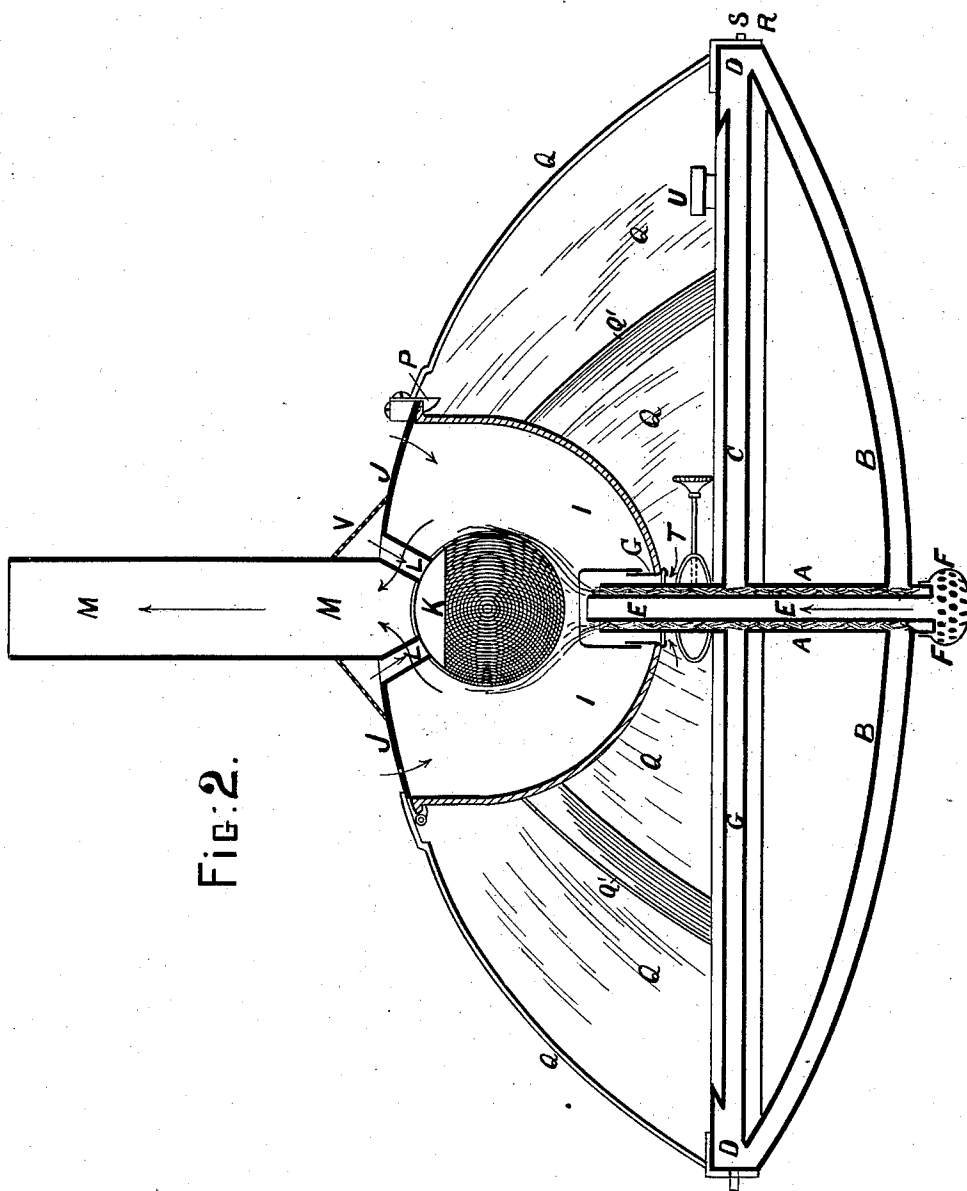


FIG: 2.

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(No Model.)

3 Sheets—Sheet 3.

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FIG:4.

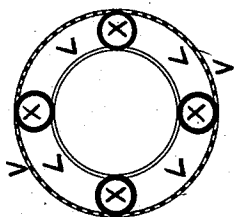
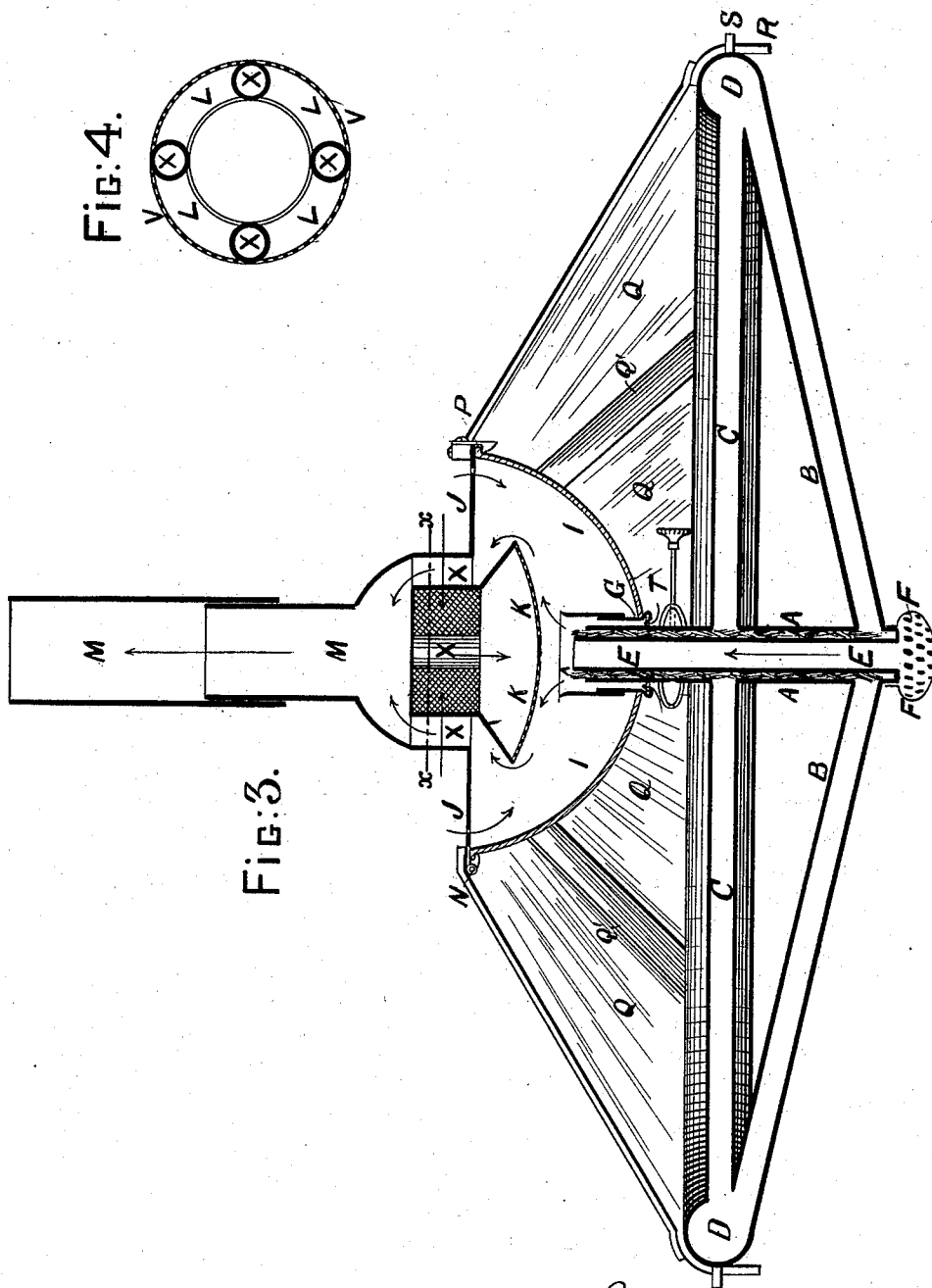


FIG:3.



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UNITED STATES PATENT OFFICE.

JAMES ROOTS, OF WOLSELEY GARDENS, GUNNERSBURY, COUNTY OF MIDDLESEX, ENGLAND.

OIL-LAMP.

SPECIFICATION forming part of Letters Patent No. 384,079, dated June 5, 1888.

Application filed January 26, 1888. Serial No. 261,993. (No model.) Patented in England August 31, 1886, No. 11,061, and in Belgium October 7, 1887, No. 79,119.

To all whom it may concern:

Be it known that I, JAMES ROOTS, a subject of the Queen of Great Britain, residing at Wolseley Gardens, Gunnersbury, in the county of Middlesex, England, have invented new and useful Improvements in Oil-Lamps, (for which I have obtained a patent in Great Britain, No. 11,061, bearing date August 31, 1886, and in Belgium, No. 79,119, bearing date October 7, 1887,) of which the following is a specification.

This invention relates to oil-burning lamps, and has for its object to provide novel means for producing a brilliant and intense light; and to this end the invention consists in the features of construction and combination of devices hereinafter described and claimed.

My invention will be understood by the annexed drawings, in which—

Figure 1 shows a lamp with my improvements applied thereto, the spreader being of conical or rounded button form. Fig. 2 is a modification showing the spreader of globular form. Fig. 3 is a modified arrangement of the air-supplying passages and combustion-ducts-escaping channels. Fig. 4 is a horizontal section through line *xx* of Fig. 3.

A is the wick-carrier tube in connection at the bottom with oil supply pipes B, set at an angle.

C C are other oil-supply pipes connected to the wick-carrier tube A, said pipes being in connection with a ring-shaped reservoir, D.

The pipes or tubes C extend horizontally from the reservoir to the upper part of the wick-tube, while the pipes or tubes B are inclined and extend from the reservoir to the lower part of the wick-tube. This construction not only braces and sustains the wick-tube in a vertical position, but delivers the oil thereto at different levels.

Within the tube A is an air-tube, E, for supplying the upper inner surface of the flame with air, said tube having a perforated bulb, F, at its lower part to check any sudden inrush of air, whereby a steady flame is produced. Attached in the aperture of the glass I is the burner-cap G, having a ring of perforations at its lower end, air passing through

these perforations to supply the lower outer surface of the flame, as indicated by the arrows. The burner projects through said ring.

The circular diaphragm J of the lamp is hinged at N to the upper edge of the glass globe I, and a spring-catch, P, is provided on the diaphragm to hold it down upon the said glass, the catch engaging the top edge of the globe for that purpose. The diaphragm J is provided near its outer edge with an annular row of perforations to admit air into the globe I, as indicated by the arrows. The diaphragm is also furnished with a central orifice and carries a pendent foraminous flame-spreader, K, having communication with the two transverse side tubes or passages, L, located directly above the diaphragm and at the lower end of the metal chimney-base M. The flame from the wick heats the flame-spreader and diaphragm, and the air entering the tubes or passages L and passing through the heated flame-spreader is thereby heated, and in such condition passes to the upper inside surface of the flame. The air-tube E, being also heated by the flame, serves to heat the air and deliver it in such condition to the lower inside surface of the flame.

A removable reflector, Q, preferably made in sections, is arranged above the circular oil-reservoir D. Braces Q' connect the glass globe I with the reservoir D. By removing the reflector the diaphragm J can be raised on its hinge N to gain access to the globe I for any desired purpose.

The wick-controlling mechanism is indicated by T, and may be of any ordinary construction. The cap G, being made of metal, is heated by the flame, and serves to heat the air entering at the lower end of the cap and thus supply heated air to the outer surface of the flame. The air entering the perforations in the diaphragm J serves to cool the glass globe I.

The letter U indicates a filling-orifice closed by a screw-cap, as usual.

In Fig. 1 the supply of air to the spreader K enters by the tubes or passages L, over the mouths of which is a perforated conical screen,

V; but in the modification shown at Figs. 3 and 4 the products of combustion are conveyed to the chimney M by four or more tubes, X, while air passes between the tubes to the spreading and heating chamber K. Otherwise this construction of lamp is the same as that shown at Fig. 1.

In Fig. 2 I show a modified shape of oil-reservoir, D, and also a modified arrangement of air-passages, L L, leading to the spreader K, which is here shown of globular form, and the lower part of the body perforated.

Although annular reservoirs are shown, the lamp may be made with an ordinary reservoir.

I claim as my invention—

1. In an oil-burning lamp, the combination of the globe I, the perforated diaphragm J, having a central orifice and mounted on the top of the bowl and carrying a chimney-base, the hollow flame-spreader K, having a convex perforated lower face and suspended centrally from and supported by the said diaphragm, air-supply passages leading into the hollow flame-spreader to conduct air to the interior of the flame, the wick-tube A, extending into the globe under the flame spreader and having the central air heating and supply tube, E, open at its lower end to the external atmosphere and at its upper end open to the globe, and the tube or cap G, surrounding the wick-tube in the base of the globe, and supported by the latter and separated from said wick-tube by an intervening air-space, said tube or cap being open at its lower end to the external atmosphere, substantially as described.

2. The combination, in an oil-lamp, of the globe I, the diaphragm J, mounted on the globe and having a central orifice and carrying a chimney-base, the hollow flame-spreader K, suspended from the center of the diaphragm and having a perforated convex lower face, air-supply passages opening into the hollow flame-spreader for conveying air thereto and to the interior of the flame, the wick-tube A, extending upward through the bottom of the globe and having the central air-tube open at its lower end to the external atmosphere, and the tube or cap G, surrounding the wick-tube in the base of the globe and open at its lower end to the external atmosphere and separated

from the wick-tube by an intervening air-space, substantially as described.

3. The combination, in an oil-lamp, of the glass globe I, the wick-tube A, extending into the bottom thereof, the diaphragm J, mounted on the top of the globe and having a central orifice, the hollow flame-spreader K, suspended from the center of the diaphragm and having a convex perforated lower face hung over the wick-tube, air-supply passages leading into the interior of the flame-spreader to supply heated air to the interior of the flame, and passages from the globe to the chimney-base for the products of combustion, substantially as described.

4. An oil-burning lamp comprising a wick-tube having a central air-supply tube, a glass bowl into which the wick-tube projects, a short air-conducting tube or cap around the wick-tube located in and supported by the bottom of the globe, a perforated diaphragm on the top of the globe carrying a chimney-base and having a central orifice, a hollow flame-spreader having a convex perforated lower face hung directly over the wick-tube, air-supply passages leading into the hollow flame-spreader for conducting heated air thereto and to the interior of the flame, and passages from the globe to the chimney-base for the products of combustion, substantially as described.

5. The combination, in an oil-lamp, of the glass globe I, the wick-tube A, extending into the globe and having its lower portion below the globe, the surrounding oil-reservoir D, the inclined braces Q', extending from the reservoir to the globe for supporting the latter, horizontal tubes C, leading from the reservoir to the upper portion of the wick-tube below the globe, and the inclined tubes B, leading from the reservoir to the lower portion of the wick-tube, substantially as described.

In witness whereof I have hereto signed my name, in the presence of two subscribing witnesses, this 10th day of January, 1888.

JAMES ROOTS.

Witnesses:

RICHARD CORE GARDNER,

JAMES GEORGE NEWMAN,

Both of 166 Fleet Street, London, England.