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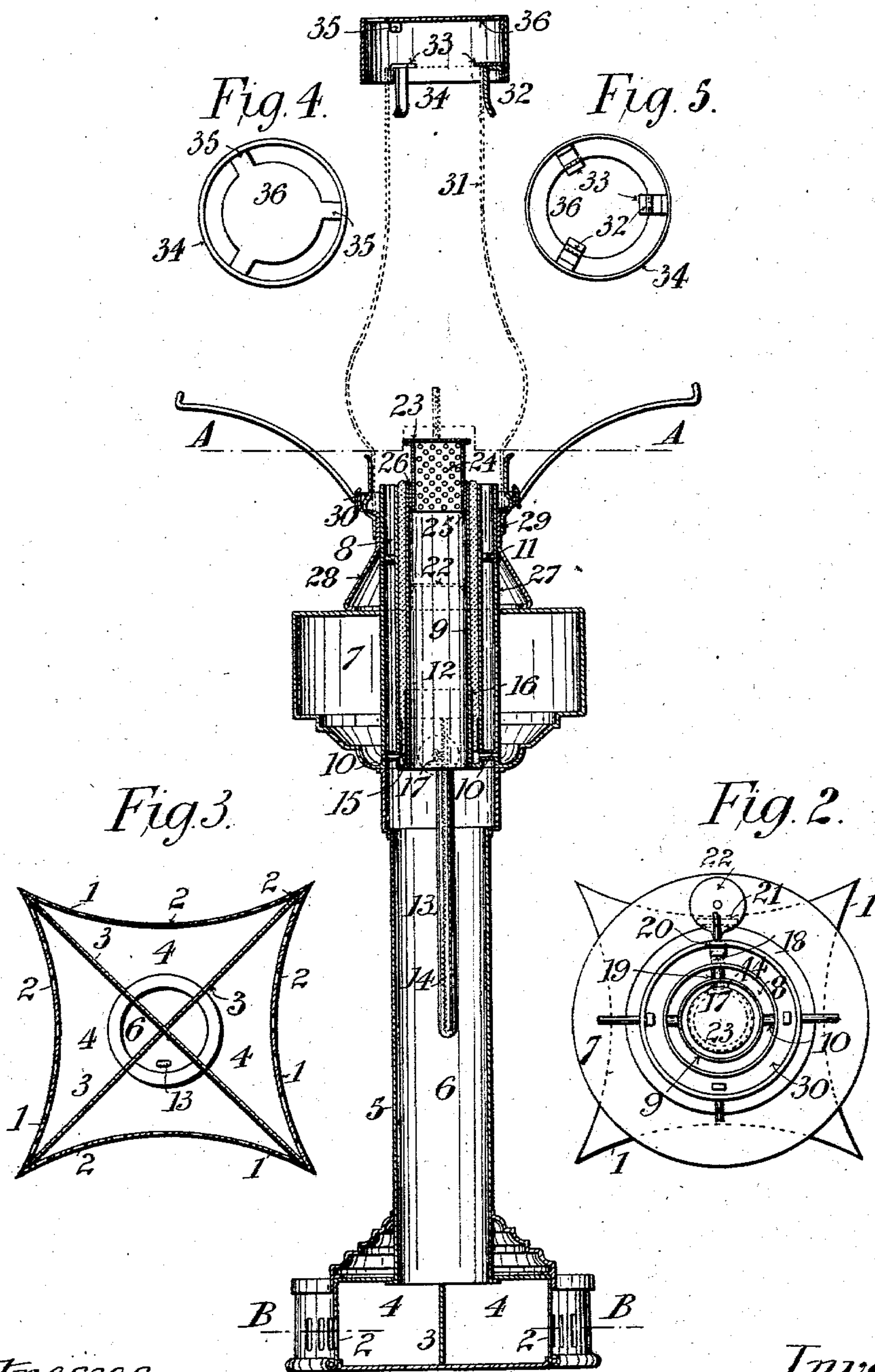
J. F. C. FARQUHAR.

OIL LAMP.

APPLICATION FILED OCT. 16, 1902.

NO MODEL.

Fig. 1.



Witnesses:
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UNITED STATES PATENT OFFICE.

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OIL-LAMP.

SPECIFICATION forming part of Letters Patent No. 730,447, dated June 9, 1903.

Application filed October 16, 1902. Serial No. 127,517. (No model.)

To all whom it may concern:

Be it known that I, JOHN FREDERICK COOKE FARQUHAR, a subject of the King of Great Britain and Ireland, residing at Vacluse, near Sydney, in the State of New South Wales and Commonwealth of Australia, have invented Improvements in Oil-Lamps, of which the following is a specification.

This invention relates to those descriptions of oil-lamps in which there is a central draft of air upward through a passage surrounded by the wick-tube to the point of combustion. The improvements have been specially devised in order that such lamps may be used in any drafts or air-currents within reason, that in such lamps cold air will be prevented from approaching the flame, the drafts down the chimney will be prevented, that induced reverse drafts from the flame will be prevented, that the wick-tube will be kept comparatively cool, and generally that such lamps will more effectually answer the requirements of a good and steady source of light.

One of the present improvements consists in closing the chimney around its periphery at its base, so that there is no admittance for air except through the passage internally of the wick-tube, and in placing a wind-guard on the top of the chimney. This wind-guard clamps upon the chimney by three or more spring-clips which support a cylinder, from which in turn is supported a circular disk of about the same size as the top of the chimney. This disk has an annular clear space (except the supporting-ribs) between it and the cylinder of an area not less than the exit area of the chimney. The cylinder is of such a length that its superficial area below the disk will be about double the same exit area. This effectively protects the entrance to the flame of external down air-currents and protects said flame also from being affected by passing horizontal air-currents.

Another of the present improvements consists in partitioning or dividing the entrance at the base of the lamp leading to the air-passage. This may be partitioned into three or four or more spaces, each preferably presenting a slightly-concave perforated tangential front. This prevents lateral air-currents

from inducing down or reverse drafts from the flame.

A further improvement consists in surrounding the wick-tube with an annular air-space, (forming part of the air-supply passage,) which again is surrounded by the oil-reservoir, from which one or more small tubes reach across the said annular air-space to the wick-tube. Consequent upon this last-mentioned improvement is a still further one consisting in the combination, with said wick-tube and surrounding air-space, of an oil-tight sheath for the adjusting-pinion and the rack of the wick-holder.

A still further improvement consists in a particular construction of the spreader, which is supported above the top end of the wick from the wick-tube. This spreader is constructed so that those of a size may be interchangeable in different makes of lamps. The spreader-plate as ordinarily is on the top of a perforated tube, which in this construction is fixed to a collet (fitting the wick-tube) whose upper edge is slightly flanged or burred, so that the said collet will not enter the wick-tube farther than required.

In order that the invention may be clearly understood, reference will now be made to the accompanying illustrative drawings, in which—

Figure 1 is a central sectional elevation of a lamp constructed according to the present invention. Fig. 2 is a sectional plan of the same, taken below the line A A, while Fig. 3 is a reverse sectional plan taken above the line B B. Fig. 4 is a plan, and Fig. 5 a reverse plan, respectively, of the wind-guard.

The lamp-base is formed of four tangential curves or concaves 1, having perforations or orifices 2 therein and each abutting on two ends of partitions 3, dividing said base into four independent chambers 4 below the hollow pedestal 5. These divisions 4 prevent passing air from inducing downdrafts and the curves or concavities tend to the same effect, while at the same time the perforations 2 quietly collect such passing air, breaking its force if too strong and causing it to pass up through the pedestal to the burner. The bottom of the base is also hermetically closed

by an imperforate plate 4^a, so that air cannot enter the base through its bottom when the lamp is held in the hand and out of contact with any other support.

5 The pedestal 5, surrounding the air-space 6, supports the bowl or oil-reservoir 7, which encircles the air-space 8 and supports within it the annular wick-tube 9 (having closed bottom) by means of small connecting-pipes 10
10 and attachments 11. Internally of the wick-tube 9 is the passage or air-space 12, and downwardly from it extends the pocket or sheath 13 for the rack 14 of the wick-holder, (shown at the bottom of its travel,) the said pocket
15 or sheath consisting of cylinders 15 and 16, between which the wick is squeezed and tightly held. In gear with the rack 14 is a pinion 17 on the end of a spindle 18, that passes through a sleeve or casing 19 and
20 through a stuffing-box and gland 20 and terminates in a milled disk or thumb-piece 21. On top of the oil-reservoir 7 is a neck and cap 22, through which such reservoir is filled as required.

25 The flame-spreader 23 has a body 24 of perforated metal or the like fixed to a collet or cylinder 25 filling the top of the wick-tube 9, but having its top edge 26 slightly flanged or turned over or burred, so that it cannot pass
30 into said tube beyond the arbitrary distance devised in its manufacture.

Outside of the external wall 27 of the air-space 8, and which is a continuation of the internal wall of the oil-reservoir 7, is a strengthening or ornamental cone 28, supporting the
35 rest-ring 29 of the clip or gallery 30, which is without any perforations, so that when the chimney 31 rests thereon an air-tight joint is formed between them and air cannot enter the base of the chimney except through the
40 hollow pedestal 6. Around this gallery 30 there is an ordinary supporting-ring and arms for a globe, if desired. These devices, as illustrated, allow no ingress of air to the
45 chimney, and thus to the flame, other than that which enters the base and passes up the air-spaces 6, 8, and 12, during which passage it is heated by cooling the walls of such spaces, which would otherwise become dangerously
50 hot.

On top of the chimney 31 is a wind-guard, and though, perhaps, it might be constructed of other materials metal has been found to satisfactorily answer. This wind-guard is
55 made of about the proportions hereinbefore stated and shown upon the drawings, although other measurements might also be found suitable hereafter. The legs or clips or brackets 32, with rests or top pieces 33, support the cylinder 34 on the chimney 31 with its bottom edge
60 slightly below the top of the said chimney. This cylinder 34 by means of ribs or radial arms 35 supports the disk 36 clear of and above the top of said chimney 31.

65 In use the lamp emits light as ordinarily, but with greater satisfaction than lamps heretofore designed, owing to the nature, pur-

pose, and functions, as hereinbefore set forth, of the present improvements.

It is to be understood that the present improvements are not confined to any particular "make" of central-draft lamps, but might be embodied in any lamp in which there is a central draft of air upward to the point of combustion. 75

What I claim is—

1. In an oil-lamp, the combination with a hollow pedestal of a hollow base therefor closed at the bottom and having a plurality of perforated sides, and vertical baffles arranged
80 within said base so as to form with the bottom and sides thereof, compartments the upper ends of which communicate with the lower end of said pedestal.

2. In an oil-lamp, the combination with a
85 hollow pedestal, of a hollow base therefor having an imperforate bottom and a plurality of perforated sides that are joined together at adjacent edges to form corners, and vertical imperforate baffle-plates located within said
90 base, resting upon the imperforate bottom thereof, joined together at their intersecting point and also to said sides at the junction thereof, so as to form a number of compartments having air-inlet openings at the side
95 and air-outlet openings at the top in communication with said pedestal.

3. In an oil-lamp, the combination of a hollow base comprising solid top and bottom plates and a plurality of perforated side
100 plates, a hollow pedestal secured to the top of said base and having its lower open end in communication with the interior of said base, and a baffling device comprising imperforate plates arranged between the top and bottom
105 of said base and extending from the corners to the central portion thereof so as to form compartments communicating at the top with the interior of said pedestal.

4. In an oil-lamp, the combination with a
110 hollow pedestal of a hollow base comprising a solid bottom plate, perforated side plates connected together at their adjacent edges to form corners and a solid top plate formed with an opening over which said pedestal is
115 fixed, said side plates being located within an imaginary straight-line figure joining the corners of said base, and vertical baffle-plates extending inward from the corners of said base and meeting at the central portion of
120 said base.

5. In an oil-lamp, the combination with the hollow pedestal of the lamp, of a hollow wind-proof base therefor comprising four perforated vertical plates joined together at their
125 adjacent edges and located within an imaginary straight-line figure joining the corners of said base, an imperforate bottom plate, and a solid top plate having an opening therein over which said pedestal is fixed, and a baffling device comprising vertical imperforate
130 radial plates extending upward from the bottom of said base and from the central portion to the corners of the base.

6. In an oil-lamp, the combination with a hollow pedestal, of a hollow wind-proof base comprising top and bottom plates and inwardly-curved perforated side plates joined together at their adjacent edges, and an imperforate vertical baffling device comprising outwardly-extending plates arranged to divide said base into compartments communicating at the top with said pedestal.

7. In an oil-lamp, the combination of a hollow base closed at the bottom and having perforated sides, and vertical baffles arranged within said base so as to form with the bottom and sides thereof compartments open at their upper ends, a hollow pedestal extending upward from said base and communicating with the compartments therein, and an imperforate wind-proof gallery around the upper end of said pedestal.

8. In an oil-lamp, the combination of a hollow base closed at the bottom and having a plurality of perforated sides, vertical baffles arranged within said base so as to form with the bottom and sides thereof compartments open at the top, a hollow pedestal extending upward from such base, and communicating with the said compartments therein, an imperforate wind-proof gallery fixed around the upper end of said pedestal, and an annular wick-tube arranged within the upper end of said pedestal so as to form therewith an annular airway and having a central airway therethrough.

9. In an oil-lamp, a combined hollow pedestal and chimney having an inlet for air only at the lower end of the pedestal and an outlet for hot gases at the top of the chimney, a hollow base fixed to the lower end of the pedestal, said base being closed at the bottom and having a plurality of perforated sides, vertical baffles arranged within said base so as to form with the bottom and sides thereof compartments the upper ends of which communicate with the lower end of said pedestal, and a wind-guard resting upon the

top of said chimney and adapted to allow of the free escape of products of combustion therefrom but to prevent downdraft there-through.

10. An oil-lamp comprising a hollow base closed at the bottom and having a plurality of perforated sides, vertical baffles arranged within said base so as to form with the bottom and sides thereof compartments open at their upper ends, a hollow pedestal fixed to the upper end of said base and in communication with said compartments, an annular wick-tube, fixed in the upper part of said pedestal so as to form therewith an annular airway and having a central airway there-through, a lamp-chimney fitted to the upper end of said pedestal so as to exclude entrance of air at this part of the lamp, and a wind-guard consisting of a vertical tube adapted to be supported from the top of said chimney, open at top and bottom and extending below the top of said chimney, and a disk supported by the upper end of said tube at a distance above and covering the top of said chimney.

11. In an oil-lamp, the combination with a hollow lamp-base, pedestal and chimney, of a wind-guard resting on the top of said chimney and comprising an imperforate tube of greater cross-sectional area than the top of said chimney, said tube being open at top and bottom, extending below the top of said chimney, and adapted to be supported by the upper end of the chimney, and a disk carried by and level with the top of said tube and of sufficient diameter to cover the upper end of said chimney and leave an outlet for products of combustion between itself and said tube.

Signed at 75 and 77 Cornhill, London, England, this 8th day of October, 1902.

JOHN FREDERICK COOKE FARQUHAR.

Witnesses:

PERCY E. MATTOCKS,
HUGH HUGHES.