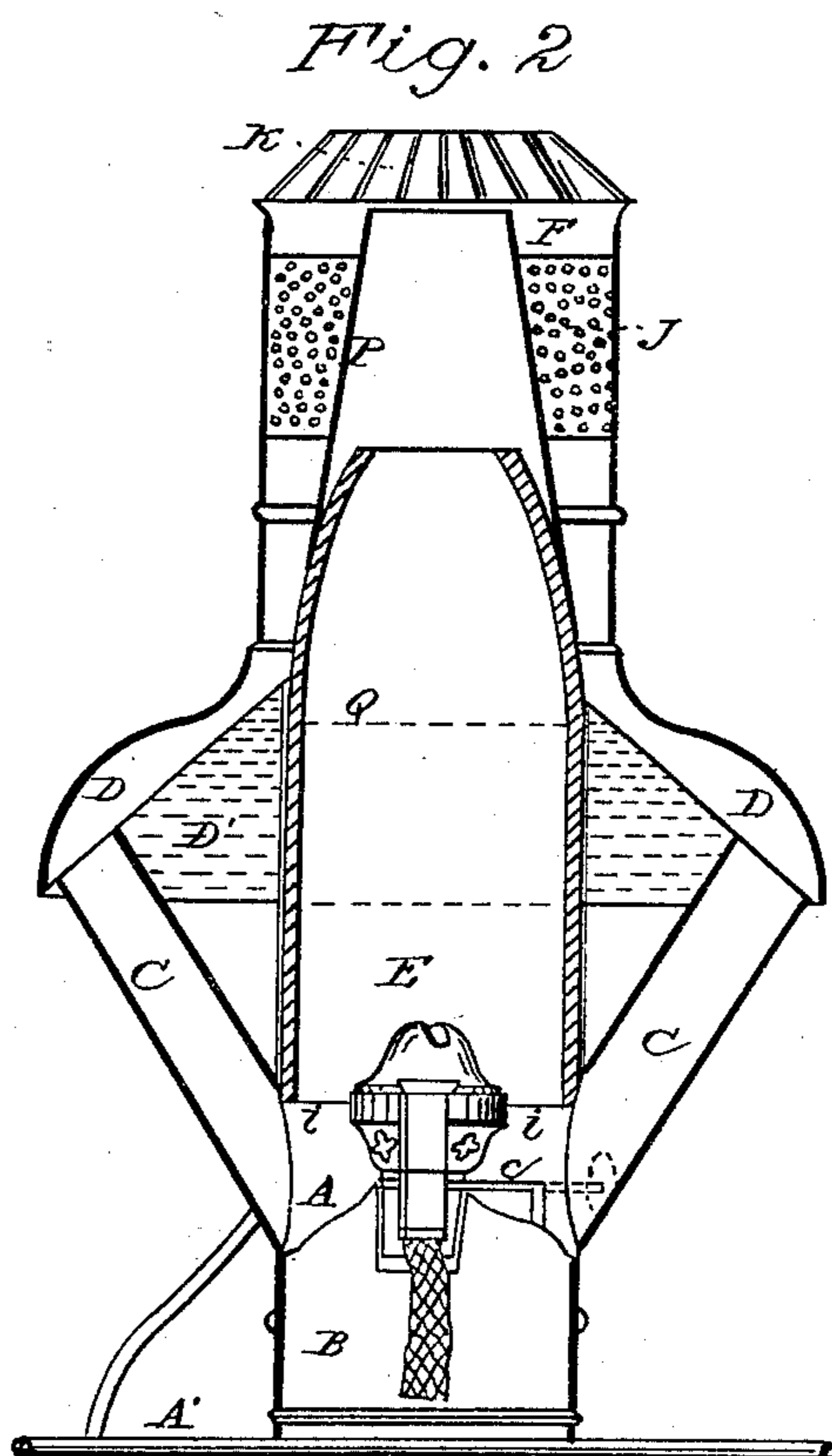
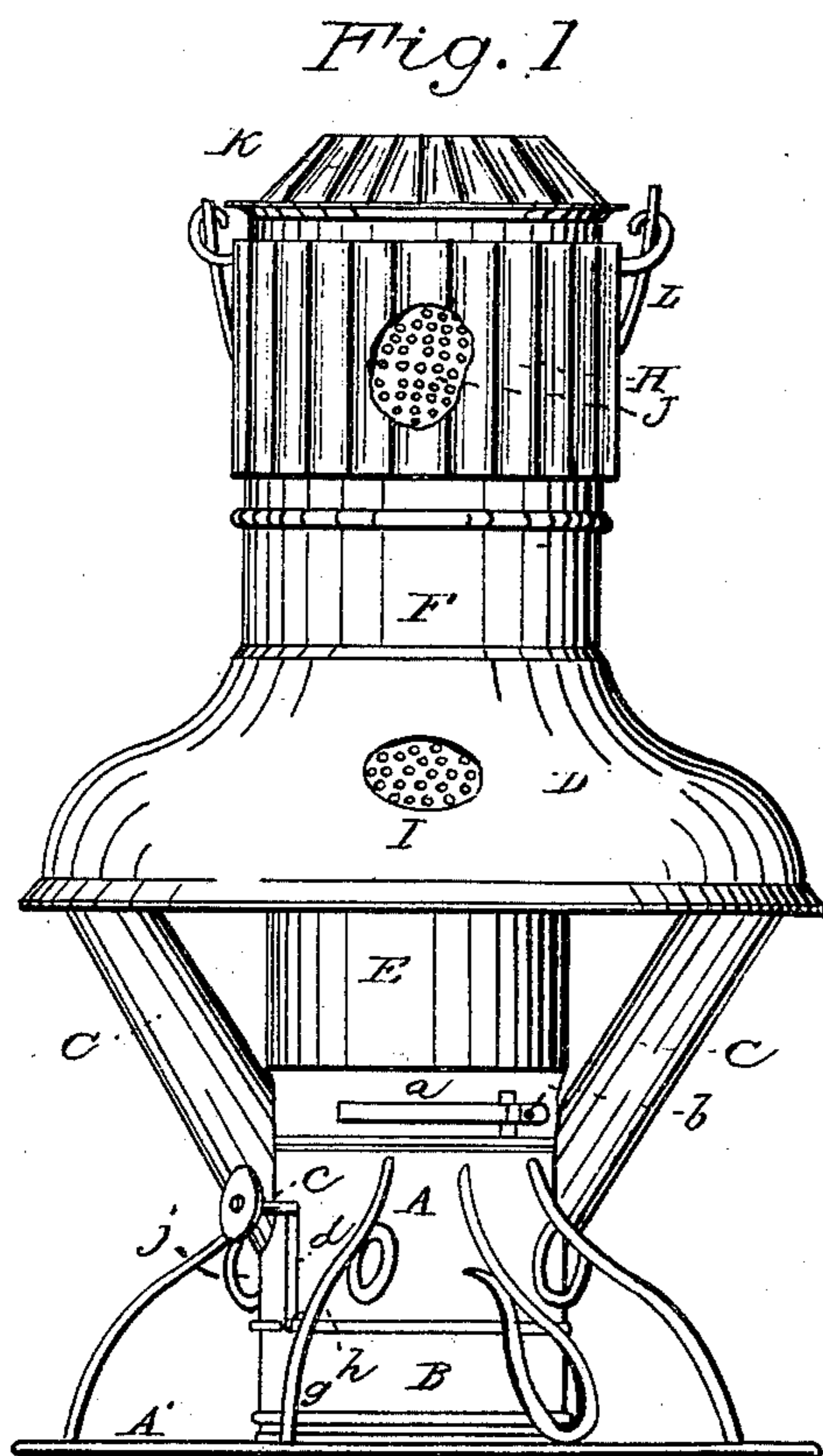


W. WESTLAKE.

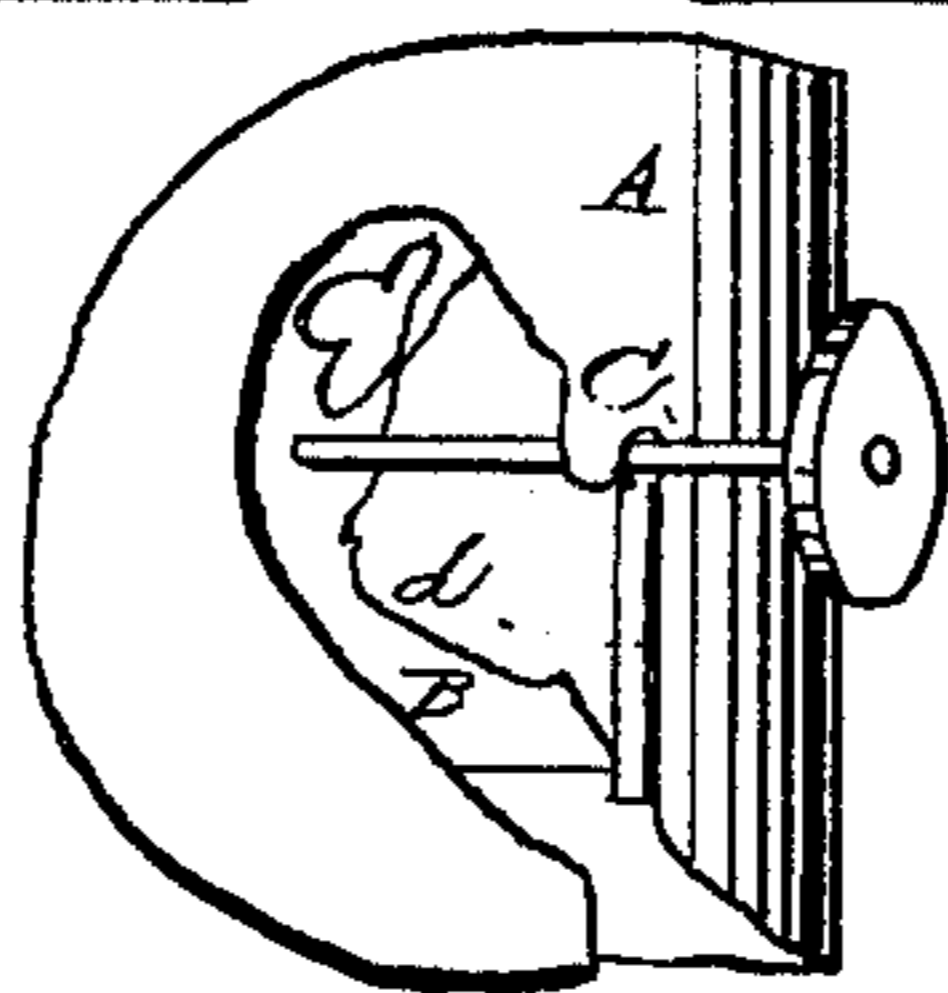
Lantern.

No. 94,536.

Patented Sept. 7, 1869.



*Fig. 3*



Witnesses

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# United States Patent Office.

WILLIAM WESTLAKE, OF CHICAGO, ILLINOIS.

Letters Patent No. 94,536, dated September 7, 1869.

## IMPROVEMENT IN LANTERNS.

The Schedule referred to in these Letters Patent, and making part of the same.

To all whom it may concern:

Be it known that I, WILLIAM WESTLAKE, of the city of Chicago, in the county of Cook, and State of Illinois, have invented certain new and useful Improvements in Lanterns; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 represents a side view.

Figure 2, a vertical section.

Figure 3, a detail, showing the covering for the ratchet-opening.

The nature and object of my invention consist in a novel construction of a lantern, so arranged that all of its parts will perform their functions without disturbance from winds or the elements of nature outside, and in the several parts and combinations hereinafter set forth and claimed as new.

To enable others skilled in the art to make and use my improved lantern, I will describe its construction and operation.

The base A and A' is made by making the band A just large enough to pass a sun-burner lamp-chimney through it, and about one and one-half inch in height.

To this I attach the wire or other open base A', for the purpose hereinafter named.

The oil-cup B is made of the same size as the band A, and is attached thereto by means of the springs g, hooks, or other suitable fastenings.

This oil-cup is provided with a burner or wick-tube and cap similar in construction to an ordinary sun-burner, except that the upper annular projection i is as shown.

The space between this flange i and the top of the oil-cup is not covered by the chimney as in sun-burners.

I usually make an opening or slit, j, in the outer band, for the passage of an elongated spindle to the wick-ratchet, so that the wick may be regulated from the outside.

I cover this opening j with a sliding piece, d, which is permanently attached to the oil-cup, and is made to slide up, either on the outside or inside of the band A, as may be desired, and it extends up against the spindle c of the wick-ratchet, so as to form a support for it.

The chimney E comes down to or nearly to the flange i of the burner, but does not rest upon it, as it is supported by a pin, b, fig. 1, which is attached to the spring a, and passes through the band A, thus supporting it in place by a single spring-catch.

When the chimney is to be withdrawn for purposes of cleaning or inserting a new one, the oil-cup B is detached and withdrawn, and as the burner and the ratchet-support d are withdrawn with it, the space for its passage is entirely cleared from obstructions. By simply lifting the spring a, the pin b is withdrawn from beneath the end of the chimney, and it passes down

through the band A without obstruction, making it very easy to take out the chimney through the base of the lantern, and does away with all bands for filling the space between the chimney or globe and the vertical band of the base, and the pin b furnishes a strong support for such chimney or globe, without requiring any shoulder, bead, swell, or other projection of the globe for its support.

The continuation of the chimney E from the deflector D upward, I usually make of tin, which is curved and constructed as shown, so that any ordinary sun-burner chimney can be used, for the reason that this class of chimneys can be found in almost all places, and can, therefore, be easily replaced in case of breakage. I, however, prefer a chimney especially made for this lantern, which is a glass cylinder, about four inches in length, of the sun-burner chimney diameter and without swell or contraction.

On opposite sides of the band A, I attach the tubes C, which are about four inches in length, (the precise length or height is not material, so that the deflector is not carried too high,) and extend upward and outward, as shown.

To the top of these tubes I attach firmly a hollow annular deflector, D. This deflector can be made in any convenient form, and is made hollow, as shown.

The lower plate D' is concave, and arranged in reference to the light, so as to produce a focus about six inches below the base A'. The lower side of this plate is burnished, or made of material which will deflect the light.

The upper plate D is placed sufficiently far from the lower, D', to leave a considerable space to form an air-chamber or reservoir, which is connected with the air-space below the burner by means of the tubes or passages C.

Air is admitted into this chamber partly through the protected openings I, and partly from the space between the metallic extension P of the chimney and the dome-band F, which band F is connected with or forms a part of the plate or annular band D, as shown, while the metallic chimney-extension P is connected with and supported by the lower or deflector-plate D'.

The band F of the dome is perforated at J, as shown, or it may be cut away in places, and these holes covered with wire gauze or perforated tin, and the perforated portions or openings are covered by a wind-breaker, H, which may be made of a corrugated or fluted band, as shown, or in any other convenient form.

The top is covered by the cap K, which may be permanently attached, but I prefer to make it detachable, as shown, so that any accumulation of soot or dirt may be easily removed.

The bail L is made and attached in any well-known or convenient form.

In operation it will be seen that all of the air which comes in contact with or feeds the flame is taken from

a distance above such flame, as the air-passages in the base are entirely closed. The air enters the chamber or reservoir D and D', as described, and after passing down into the space beneath the cup of the burner, a portion passes through the plate i, to support combustion above the burner-cup, so that in either place there is no direct or immediate connection with the surrounding atmosphere, and, therefore, no disturbance of the flame whatever the condition of the atmosphere may be. The interposed reservoir or air-chamber D also adds greatly to the steadiness of the flame, for the reason that when the tubes are of any considerable length, any sudden movement of the lantern will partially exhaust the supply of air, and make the flame weak, and a sudden return to the equilibrium, owing to its elasticity, will cause the flame to "flare." This difficulty is very nearly overcome by interposing a reservoir between the highest point of induction of the air and the point of delivery into the combustion-chamber of the lantern. By this arrangement of the air-chamber so near the burner, I am enabled to dispense with the usual wire guard to protect the globe from breakage by concussions, and I am also enabled to use common lamp-chimneys in place of globes, which are much cheaper and more readily obtained, and they are protected from breakage by storms when somewhat heated, as the chamber or deflector will keep them from coming in contact, making it, as I have determined, from

experiments, a powerful and yet a comparatively cheap lantern.

The deflector D' may be used with advantage in lanterns where the air-chamber would be useless.

Having thus fully described my improved lantern,

What I claim as new, and desire to secure by Letters Patent, is—

1. The air-chamber formed by the plates or disks D and D', and located between the dome and base of the lantern, in relation to the globe, substantially as and for the purposes specified.

2. The combination of the band F and disk D, with the band P and disk D', when constructed and operating substantially as described.

3. The deflector D', forming the lower disk of the air-chamber D, in combination with the open base A', when so arranged as to concentrate the light directly beneath the base of the lantern, substantially as specified.

4. The permanent wick-ratchet support d, when attached to the oil-pot, and so located as to cover or stop the opening in the band A, substantially as specified.

5. The combination and arrangement of the bands F and P, disks D and D', with the tubes C and base A, substantially as described.

Witnesses: WILLIAM WESTLAKE.

E. A. WEST,

L. L. BOND.