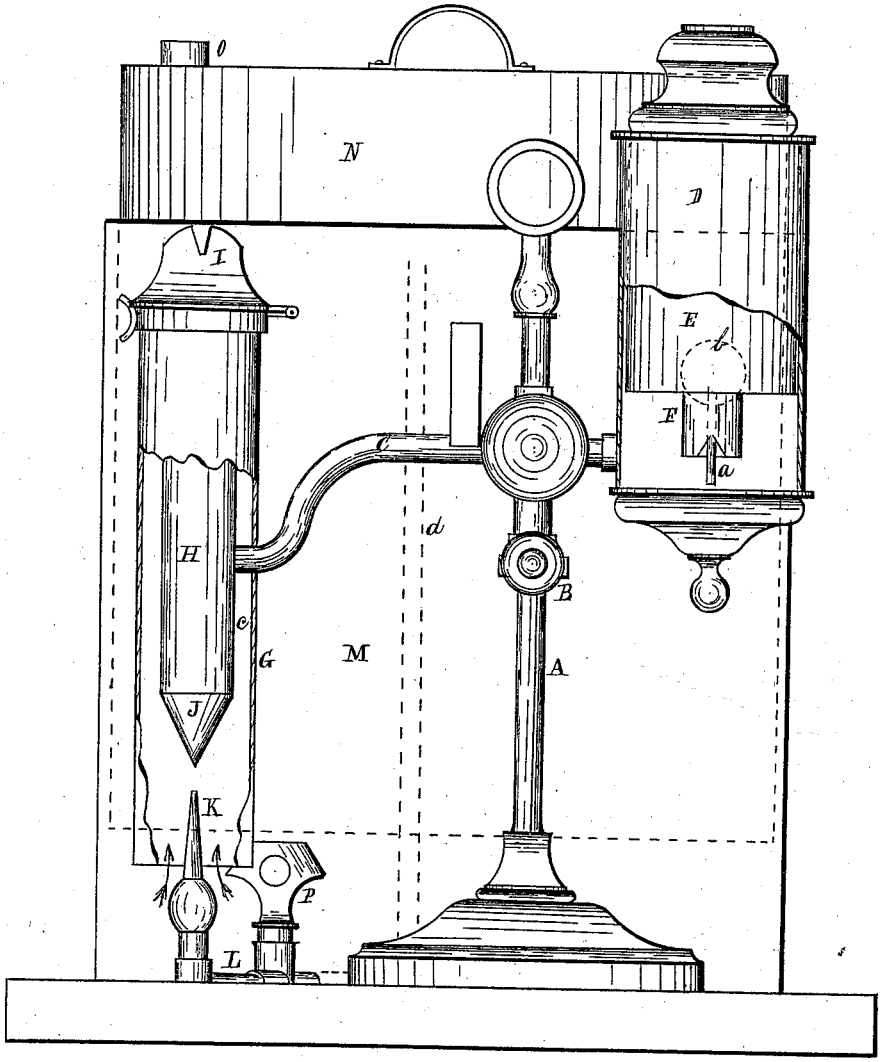
W. H. GARLICK.
Oil-Lamp.

No. 199,532. Patented Jan. 22, 1878.




Witnesses.
W. H. Quattlebaum
C. A. Rhoades.

Inventor.
W. H. Garlick.
Per Burridge & Co.
Attys

# UNITED STATES PATENT OFFICE.

WILMOT H. GARLICK, OF ELLIOTTSVILLE, OHIO.

## IMPROVEMENT IN OIL-LAMPS.

Specification forming part of Letters Patent No. **199,532**, dated January 22, 1878; application filed December 20, 1877.

*To all whom it may concern:*

Be it known that I, WILMOT HALL GARLICK, of Elliottsville, in the county of Jefferson and State of Ohio, have invented a certain new and Improved Oil-Lamp; and I do hereby declare that the following is a full, clear, and complete description thereof, reference being had to the accompanying drawings, making a part of the same.

The nature of this invention relates to a lamp; and the object of the invention is to produce a lamp that may be used without a chimney, by supplying to the burner a direct and an induced current of air by means of a certain device, hereinafter more fully set forth and described, reference being had to the accompanying drawings for illustration.

In said drawings certain portions are represented as broken away that the inner parts may be seen.

To the standard A is secured, by a set-screw, B, a feed-pipe, C. One end of said pipe supports an oil reservoir and feeder, similar in construction and operation to that used in what is known as the "student's lamp;" hence a complete description thereof will not be necessary in this place, but which, however, in brief consists of the outer shell D, inclosing the oil-vessel E, provided with the notched outlet F and stop-valve attached to the stem *a*. Said valve is indicated by the dotted circle *b*, all of which, as above said, is substantially the same as the reservoir of the student's lamp. Other kinds of reservoirs or oil-holders may be used; hence the particular one above described is not essential for a successful working of my invention, it being applicable to all forms of oil-holders. The opposite end of the tube C supports the burner, consisting of the shell G and the wick-tube H. Between said tube and the shell is an annular space, *c*, extending upward to the burner or cone I thereof. The lower end of the wick-tube terminates in a point or inverted cone, J, directly above, and distant from one to four or more inches from the needle-point or jet K, terminating the end of a pipe, L, leading from said point K to the cylinder M, in which it extends upward near to the top, as indicated by the dotted lines *d*. Within the cylinder M is an air-vessel, N, surrounding said air-pipe L. Said cylinder and vessel together form an air receiver or holder.

Ordinary lamps for burning coal-oil require large supplies of oxygen to sustain combustion without smoking; hence they are provided with chimneys to create a draft to supply this demand, by inducing a current of air through the base of the cone or burner, in consequence of the heated air in the chimney.

The object in this way is accomplished; but it is attended by a great expense and annoyance, for the reason that the chimneys break, frequently falling to pieces while in use, rendering the lamp of no further use until a new chimney is provided, which is not at all times on hand for such emergency. To avoid this trouble in regard to the chimneys is the purpose, as aforesaid, of this invention, whereby a current of air for supporting combustion is supplied without a chimney. To this end the cylinder M is filled with water, or nearly so, it being below the end of the pipe *d*. The air-vessel N is now introduced into the cylinder, and, by reason of its being charged with air, it is buoyed up by the water in the cylinder, and the air cannot escape through the inlet O, it being closed, nor through the jet K, as it is shut off by the stop-cock P.

On lighting the lamp, air from the air-holder passes down through the pipe *d* to the stop-cock, and is turned on by means thereof. A jet of air is thus emitted from the point K, which, by impinging upon the inverted cone J, is broken up and deflected, thereby filling the annular space *c*, and ascending to the burner to supply it with the needful oxygen to support combustion. The air being thus discharged from the point K, its ascent upward induces a current of air from the outside into the shell G, as indicated by the arrows.

Said induced current of air is many times greater in quantity than the amount of air passing from the jet K, and as a result the use of a smaller air-holder is required to supply the amount of air needed than would be the case if all the air sent to the burner were taken from the jet K. Not only this, but the supply of air, being thus obtained in this two-fold manner, permits of the air-supply being sent to the burner in a gentle, soft, and equally-distributed current, so as to cause a steady

flame from the lamp, free from blowing or flaring effect, and yet with such a force as to produce perfect combustion; and hence no chimney is required for the lamp, and the trouble and expense of the same therefore avoided.

In place of the single jet K, two or more may be used, in which event they should be placed in a concentric manner. A single jet, however, produces good results, as above set forth.

The above-described device for supplying air to the lamp is not intended to be applied to portable lamps, but to such as are a fixture in the building, as wall-lights and chandeliers; hence the air-holder is placed in the basement of the building, or in some convenient place in the rear thereof, the air being conducted from the holder by suitable pipes similar to an arrangement of pipes for gas.

The holding capacity of the air-holder will be in proportion to the number of lamps to be supplied with air, and the force of the jet of air from the point K may be increased or lessened by weighting the top of the air-vessel, and the quantity regulated by the stop-cock P.

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

In combination with the air-holder herein described, and oil-reservoir, or equivalent, the shell G, wick-tube H, having a pointed or conical end, J, jet point or points K, and stop-cock, substantially as and for the purpose set forth.

WILMOT HALL GARLICK.

Witnesses:

J. H. BURRIDGE,

F. A. KETCHAM.