J. H. FERGUSON.

Lamp.

No. 231,026. Patented Aug. 10, 1880.

Fig. 1.

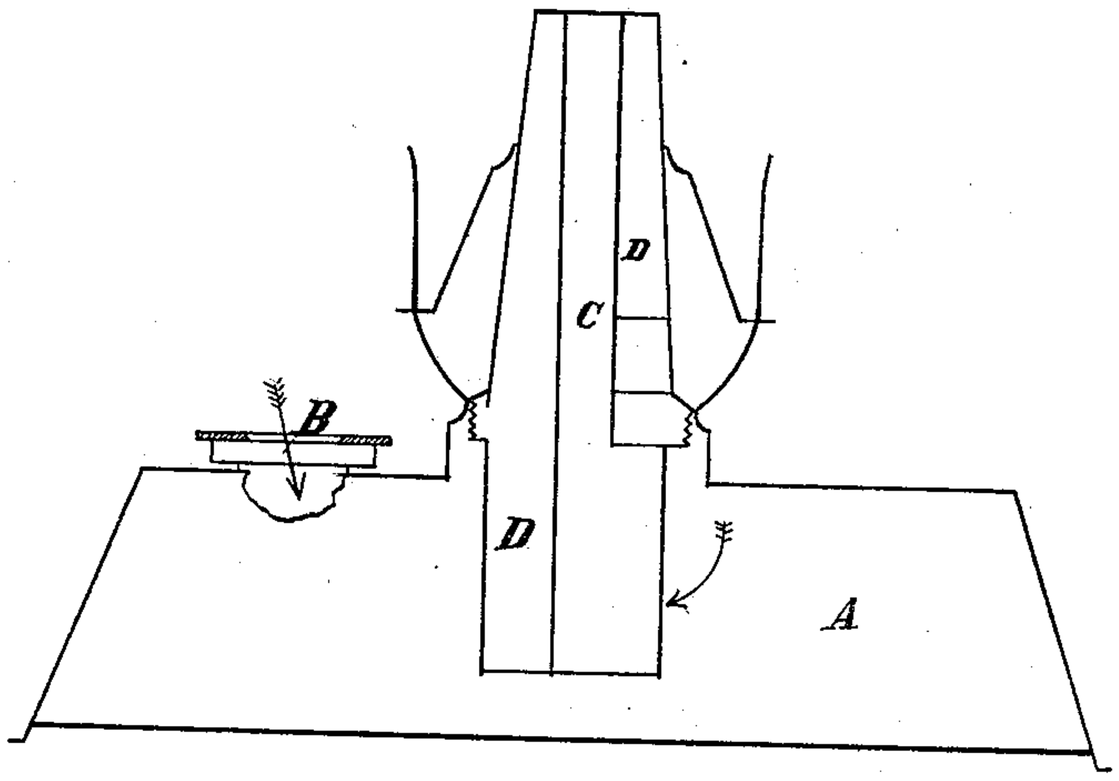
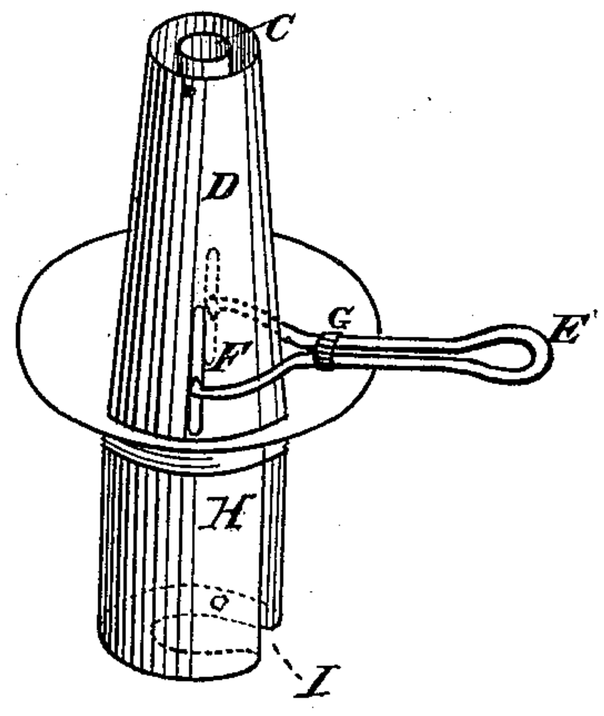


Fig. 2.



Witnesses:

John H. Hutchesson.

Victor A. Sherman

Inventor:

James H. Ferguson

UNITED STATES PATENT OFFICE.

JAMES H. FERGUSON, OF LEAVENWORTH, KANSAS.

LAMP.

SPECIFICATION forming part of Letters Patent No. 231,026, dated August 10, 1880.

Application filed March 1, 1879.

To all whom it may concern:

Be it known that I, JAMES H. FERGUSON, of the city and county of Leavenworth, State of Kansas, have invented a Safety-Lamp, of which the following is a specification.

My invention relates to a means of ventilating the oil-reservoir of lamps, whereby the vapor of kerosene or any volatile oil used in lamps is not permitted to accumulate within the reservoir and mix with the air until the mixture reaches the explosive proportion.

Heretofore the reservoir of these lamps has been provided with a small opening to admit air as the oil is consumed, and to allow the escape of oil-vapor after enough has been evolved to exert outward pressure, and in some lamps an air-inlet to the reservoir has been used in connection with a wick-tube so constructed that a small amount of mixed air and vapor was admitted to the flame through the wick-tube, for the purpose of increasing luminosity.

A lamp, also, has been described having a small vent-tube in its burner, said burner being of the Argand form, which vent-tube would, under certain circumstances, supply some air to the interior of the oil-reservoir and to the inner tube of the burner. This construction, however, was not intended to be a means of ventilating the reservoir, nor would it be practically operative as such.

My invention consists in providing the reservoir with an inlet large enough to admit all or nearly all of the air necessary to support combustion in connection with an Argand burner in which the center air-tube is formed to supply air to the flame from within the reservoir, and in connection with means for holding the wick in position within the reservoir.

It also consists in a simple lever mechanism for adjusting the wick, in combination with a slotted tube.

Figure 1 of the drawings is a vertical section of an oil-reservoir with an Argand burner, and Fig. 2 is a perspective view of the burner without the chimney-holder, and showing the wick-adjuster.

The reservoir A is provided with an inlet for air at B. The center air-tube, C, of the burner has no exterior inlet, and is formed to supply air to the flame from within the reservoir. The wick-tube D is made to extend below the base of the burner and within the reservoir a short distance, to prevent the wick from twisting and stopping the air-passage through tube C when the burner is screwed into the collar to prevent the wick from taking fire within the reservoir and to hold the edges of the wick apart.

The lower part of wick-tube D is made in the form of a crescent, and having inclosed within its concave side the lower open end of the air-tube C, is so located that its concave side is turned away from the inlet B, whereby a current of air entering the reservoir at B will pass around both sides of the wick-tube D and through tube C to the point of combustion.

The wick-adjuster E, (shown in Fig. 2,) when attached to the burner, engages the wick through slots F, in opposite sides of tube D, and is provided with a slide, G, to hold it in place. The adjuster is reliable, cheap to manufacture, and readily detachable, affording an easy means of putting in or taking out the wick and of cleaning the burner.

The operation of the safety feature of the lamp is as follows: When the lamp is lighted the column of air in the chimney is expanded by heat from the flame, and having a buoyancy proportional to its relative lightness as compared with external air, will ascend by the downward pressure of external air through the inlet B, whereby a current is established through the reservoir, keeping it cool and mingling with the oil-vapor, which, being gradually evolved, is conveyed to the flame through tube C, where it is consumed in detail and not permitted to accumulate within the reservoir and mix with the air until the mixture reaches the explosive proportion.

I do not limit myself to the precise form of construction shown, but desire to secure by Letters Patent all forms embodying the same means for effecting the result described.

What I claim is—

1. In a safety-lamp, the combination, substantially as set forth, of an oil-reservoir having an air-inlet and an Argand burner provided with means for holding the wick within the reservoir, and having a central air-tube through which air is supplied to the flame

from within or through the reservoir, for the purpose of ventilation.

2. The reservoir A, provided with an air-inlet, B, in combination with the wick-tube D, having a crescent-shaped lower extremity, and the air-tube or ventilating-tube C, substantially as set forth.

3. The adjuster E, having the slide G, in combination with the slotted wick-tube D, substantially as set forth.

JAMES H. FERGUSON.

Attest:

ANTON A. BERMINE,

JOHN L. MAXWELL.