

C. GODFREY.
LAMP.

No. 179,006.

Patented June 20, 1876.

Fig. 1.

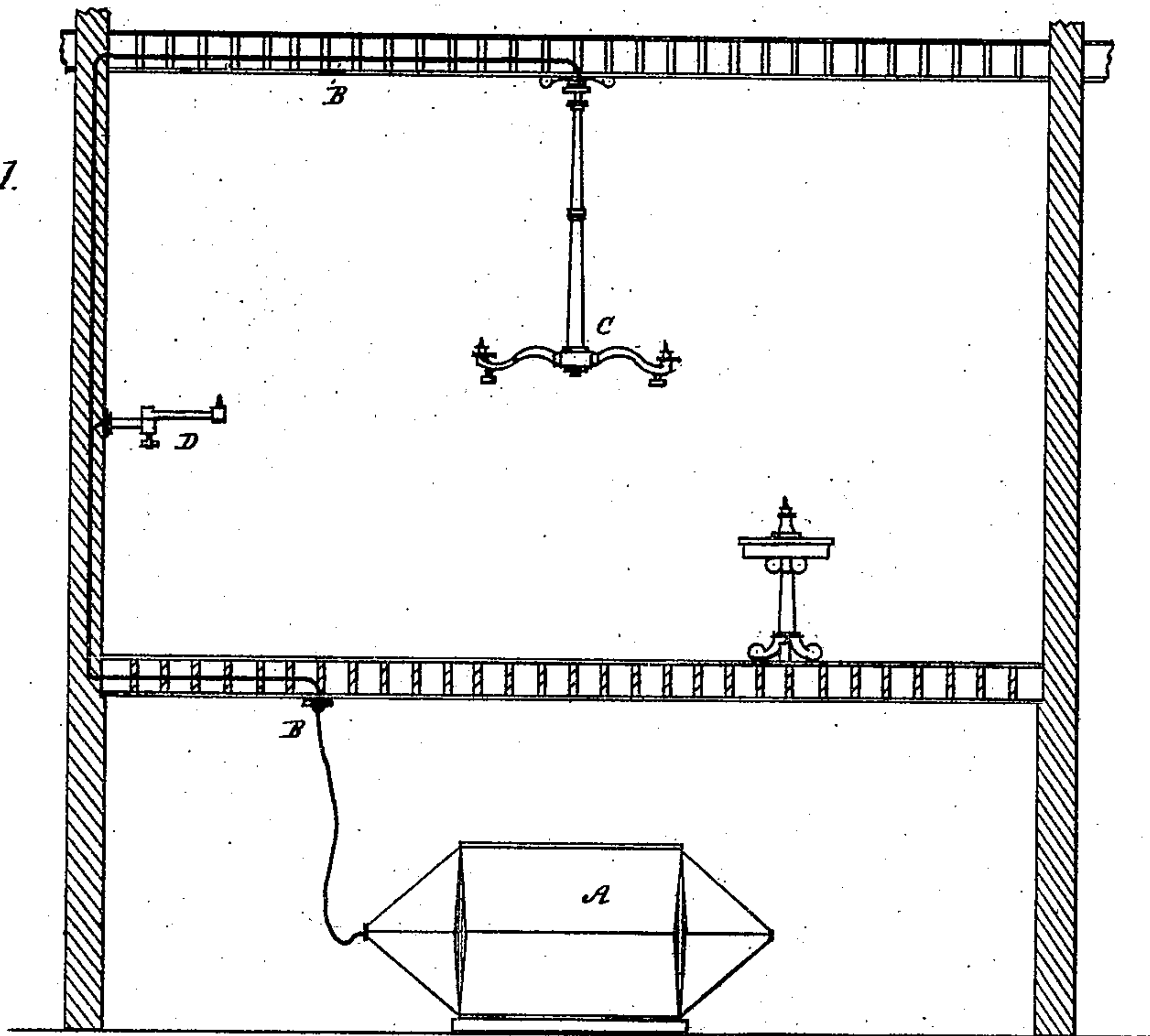


Fig. 2.

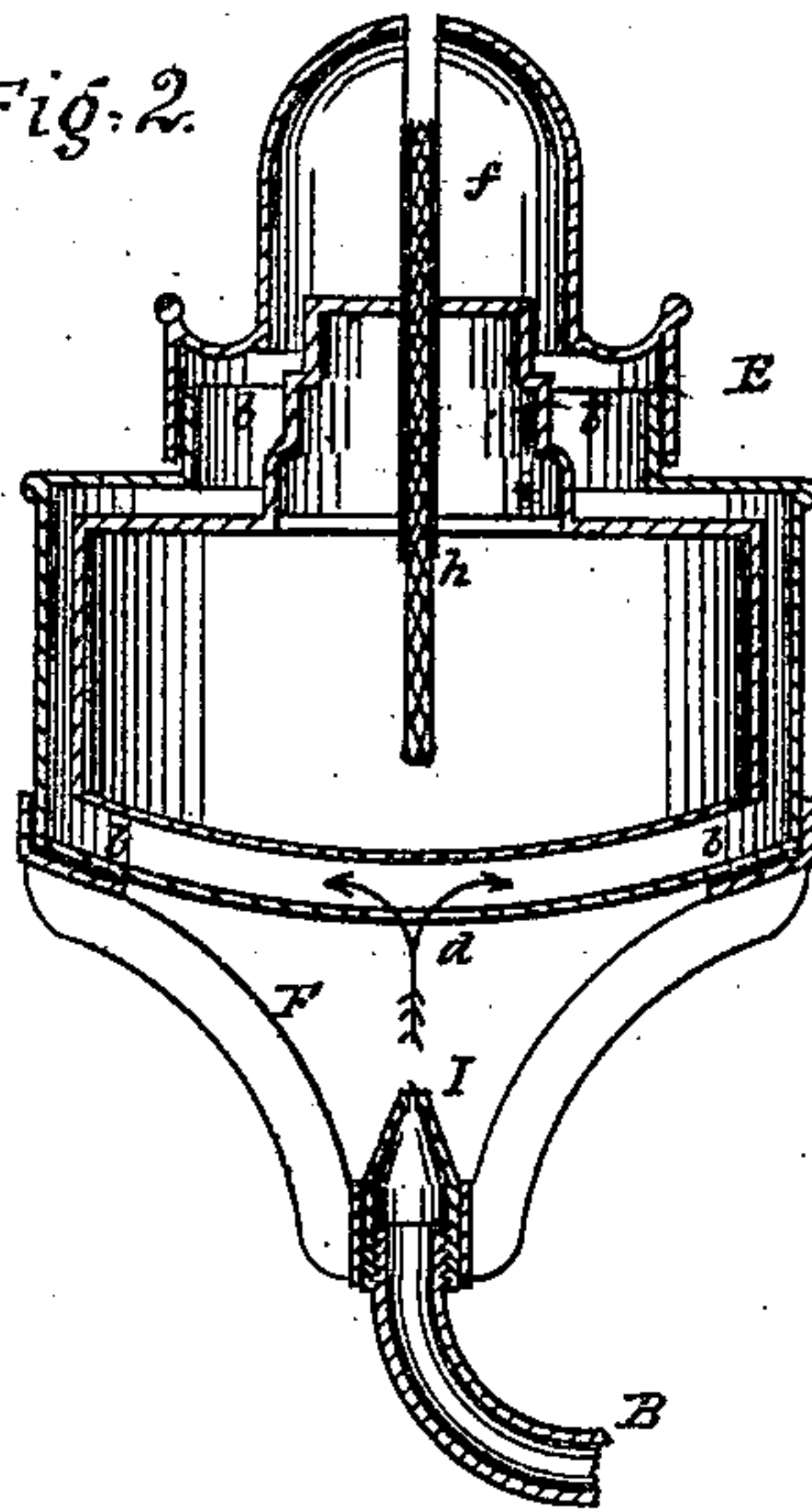
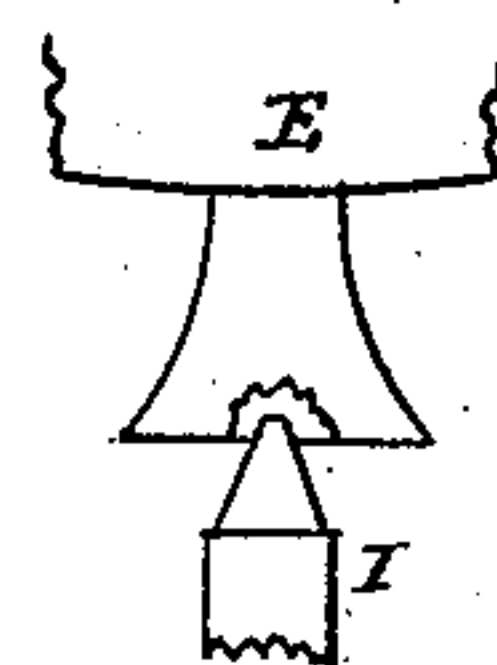


Fig. 3.



Witnesses:

May J. Eller
Frederick Rockwell

Inventor:

Cornelius Godfrey.
By his atty. Wm. S. Thornton.

UNITED STATES PATENT OFFICE.

CORNELIUS GODFREY, OF HUNTINGTON, NEW YORK.

IMPROVEMENT IN LAMPS.

Specification forming part of Letters Patent No. **179,006**, dated June 20, 1876; application filed April 25, 1876.

To all whom it may concern:

Be it known that I, CORNELIUS GODFREY, of Huntington, in the county of Suffolk and State of New York, have invented an Improved Apparatus for Burning Kerosene and other Oils in Lamps without a Chimney; and I hereby declare the following to be a full, clear, and exact description of my said invention, reference being had to the accompanying drawings, forming a part of this specification.

This invention relates to an improvement in the means employed for burning kerosene and other oils in lamps without a lamp-chimney, and is more especially intended to be used in connection with a system of air-conducting pipes arranged within and carried through the walls and ceilings of the building to be lighted, and supplied with air forced through the same, under pressure, from some suitable air-reservoir located in any suitable place and position; but it may also be used in connection with any convenient and suitably-arranged apparatus for conducting air forced under pressure to the lamp, and its object is to produce an augmented draft and supply of air through the lamp to feed the flame, and thereby supply the necessary amount of oxygen to the flame to insure perfect combustion, and to effect these results by means of a comparatively small amount of pressure on the air, so as to reduce, as far as practicable, the size of the reservoir in which the air is contained, and from which it is supplied to the lamp.

My said invention consists in a novel arrangement of the lamp in relation to a jet or nozzle through which the air is forced, whereby the impelled current of air produces a partial vacuum immediately underneath and at some distance from an opening formed in the bottom or near the bottom of the lamp, and connected with an interior air-passage leading to the flame, and causes a column or columns of the air surrounding the lamp to enter and pass up through the lamp to feed the flame along with the said current of compressed air. It also consists in an improved form and construction of a jet or nozzle, through which the air is forced under pressure, and in the improved constructions and combination of the several parts, whereby I am enabled to

produce with a kerosene-lamp, without the aid of a chimney, a light equal in brilliance to that produced by coal-gas.

In the accompanying drawing, Figure 1 represents a sectional elevation of part of a dwelling provided with my improved apparatus for lighting by means of oil-lamps; Fig. 2, a sectional view of the lamp and its adjuncts; and Fig. 3 is a detail view hereinafter described.

Similar letters of reference indicate the same parts in all the several figures.

A represents an air-reservoir for supplying air under pressure to the lamp. This may be of any suitable form and construction; and it is not deemed necessary to describe the same, as it does not form part of this invention. B B are pipes for conducting the compressed air from the said reservoir to the lamps, which said pipes may be of any suitable material, and may be arranged within and carried through the several apartments to be lighted in similar manner to that in which ordinary gas-pipes are usually arranged in a building, having branch pipes connecting with a chandelier, C, or a bracket, D, for a side light, or other of the well-known appliances ordinarily used for conducting coal-gas to the burners. E is a lamp, having an opening, *d*, at or near its bottom, which communicates with an interior air-passage, *b*, leading to the flame or place where combustion is effected, which said air-passage *b* is formed by means of a jacket surrounding the oil-chamber. The cone *f* and wick-tube *h* may be of ordinary or common construction, provided that the base of the said cone is not perforated, as all the air which supplies the flame is drawn into or enters the lamp below the oil-chamber *d*. F is a bracket or frame for supporting said lamp, the lower end of which said bracket is supported by the end of the branch air-pipe to which it is applied, and at the end of the said pipe is secured a nozzle or nipple, I, having a small bore, usually about one-half or one-fourth the diameter of that in an ordinary gas-burner, through which said nozzle the compressed air is emitted.

The main feature and principle of my invention consist in the position and arrangement of this nozzle or nipple I in relation to

the lamp, it being placed below the lamp, leaving a vacant space between the two, through which a column or columns of the surrounding atmosphere is drawn into the lamp and to the flame by reason of the action of the said jet of compressed air, by which means the flame is supplied, both by the air emitted from the said nozzle, and also by the air drawn into the lamp by the action of the said jet, as aforesaid, and produces an extremely brilliant light without the use of a lamp-chimney. If desired, the opening at the bottom of the lamp may be surrounded by a short downwardly-extending, flaring, or bell-shaped tube, as shown in Fig. 3, through which the air will pass on its way into the lamp; but this is not essential to the practical working of my invention. And I may also state that one or more tubes passing upward through the lamp may be substituted for the annular air-passage *b*, and that in those lamps in which a tubular wick is used the air is to be conducted to the flame through a central opening. But these several modifications I consider to be equivalent modes, which do not affect or alter the principle of my invention as above set forth and described. The form of the nozzle *I* and the mode of attaching it to the air-pipe, whether by screw-threads or otherwise, may be varied, as any nozzle adapted to emit a sufficiently thin jet of air may be used; but for the purpose of rendering the said nozzle more efficient in its operation, I make the upper end thereof in the form of a cone, as shown in the drawing, so that it will not obstruct the free passage of the current of outer air to the interior of the lamp. This nozzle or nipple *I* attach, by screw-threads or otherwise, either to the pipe or to the lower part of the

bracket or frame *F*, to which latter it forms a support.

I may state, in conclusion, that my said invention may be used independently of the air-reservoir and conducting-pipes herein described, other suitable means being substituted for the purpose of forcing an equable and steady jet of compressed air through the said nozzle *I*; and also that, by means of the relative arrangement of the lamp and nozzle, a low pressure on the air, and, consequently, an air-reservoir of comparatively small capacity and dimensions, will suffice to furnish the requisite supply of compressed air.

What I claim as my invention is—

1. In combination with a lamp having an opening in the lower part thereof, which connects with an interior air-passage leading to the flame, a nipple or nozzle of any suitable construction, through which air is forced under pressure, the said nozzle being located at some distance below the said opening, substantially as herein shown and described, for the purpose of drawing into the lamp a column or columns of air from the atmosphere surrounding the lamp, together with the jet of air emitted from the nozzle, as herein set forth.

2. In combination with a lamp having an air-passage which leads to the flame, and connects with an opening at the lower part of the lamp, the air-pipe *B* and a conical nozzle, *I*, the said nozzle being secured to the said pipe *B*, and placed at some distance below the said opening, substantially as herein shown and described, for the purposes set forth.

CORNELIUS GODFREY.

Witnesses:

JOHN S. THORNTON,
CHAS. D. BARROWS.