

O. F. Merrill

Lamp Stove.

N^o 44,548.

Patented Oct. 4, 1864.

Fig. 1.

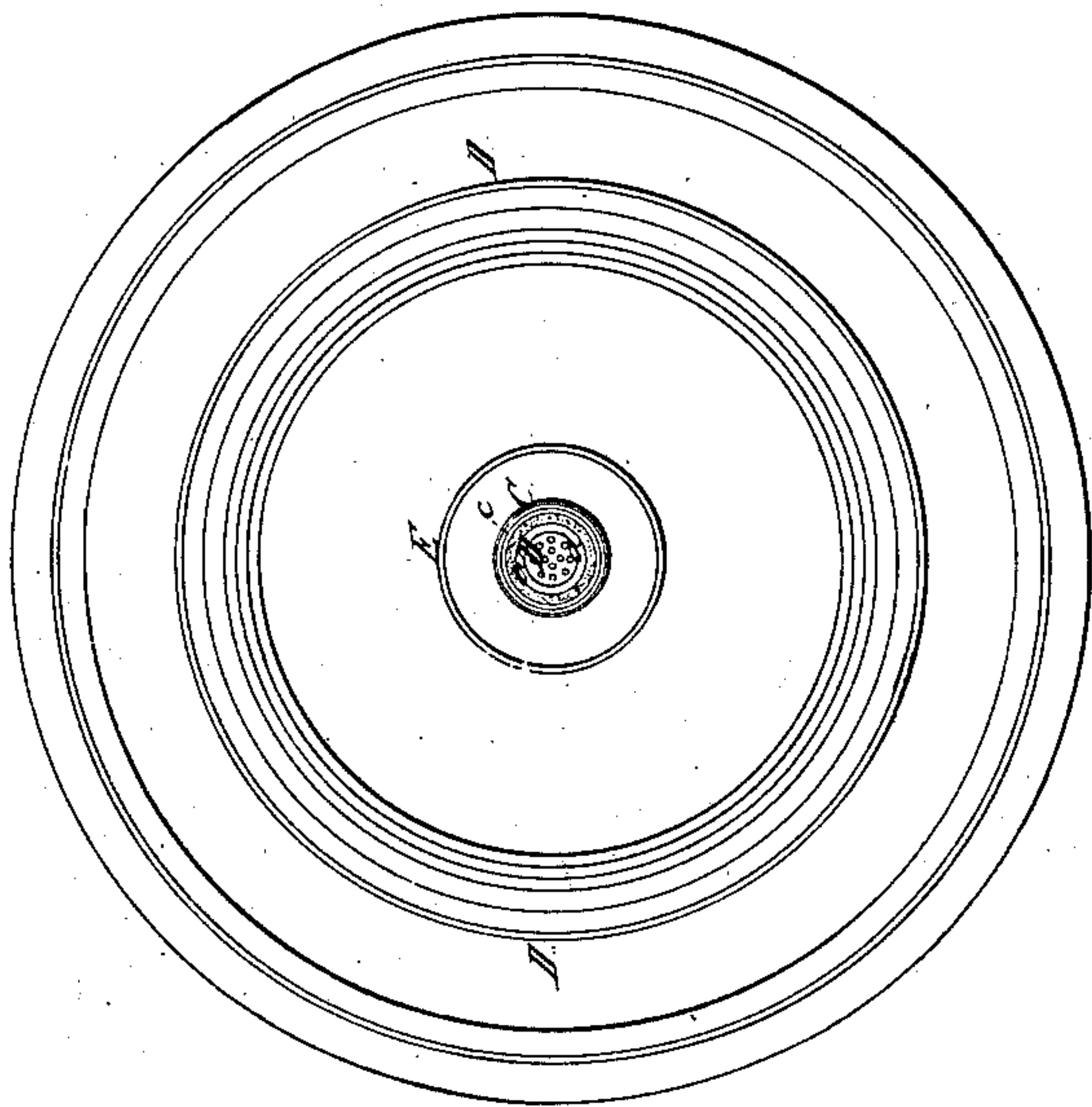
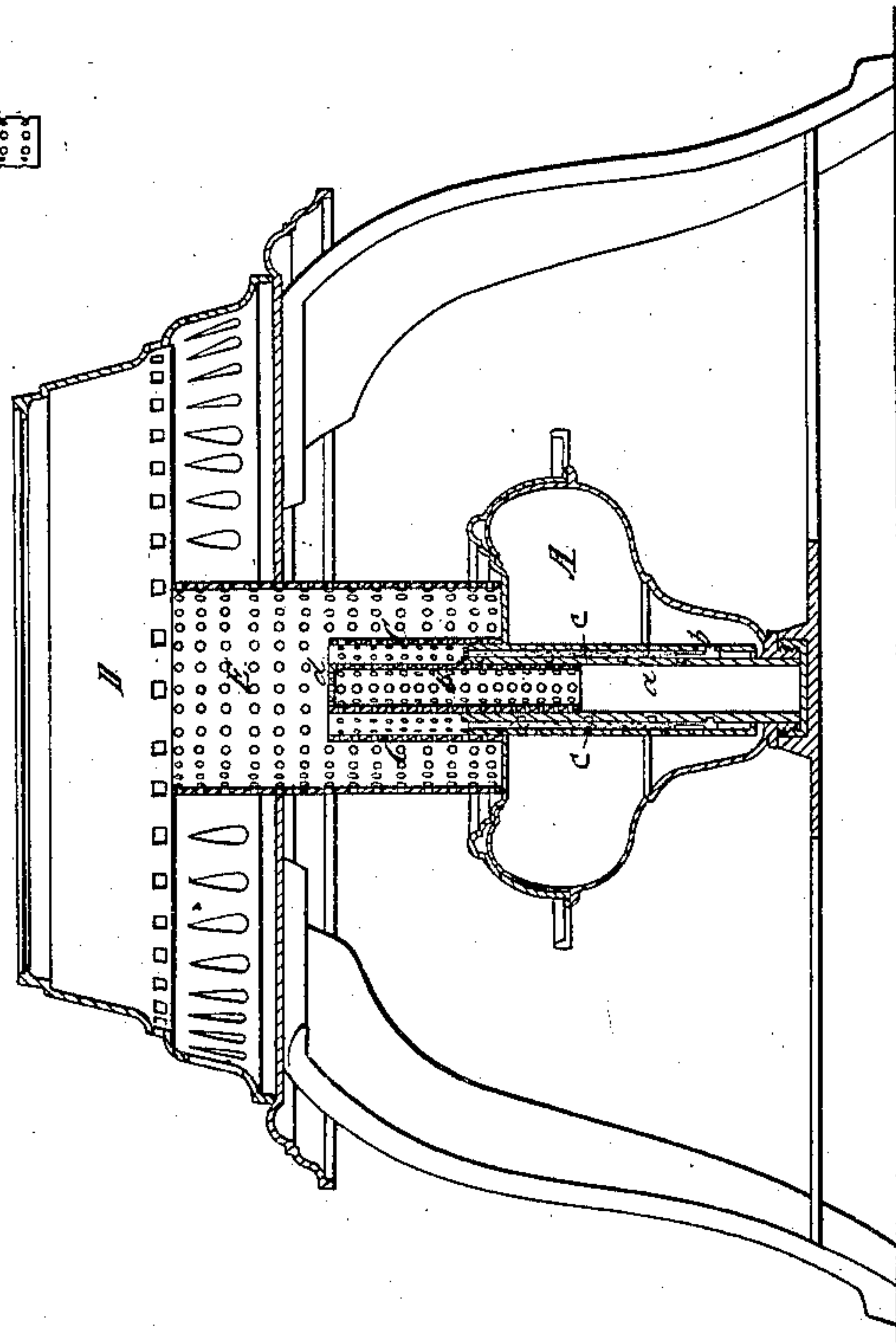


Fig. 3. Fig. 4.



Fig. 2.



Witnesses
F. P. Hoale Jr.
McSherry

Inventor
Oscar F. Merrill.
by his attorney
R. H. Eddy

UNITED STATES PATENT OFFICE.

OSCAR F. MORRILL, OF CHELSEA, MASSACHUSETTS.

IMPROVED HEATING APPARATUS.

Specification forming part of Letters Patent No. 44,548, dated October 4, 1864.

To all whom it may concern:

Be it known that I, OSCAR F. MORRILL, a resident of Chelsea, in the county of Suffolk and State of Massachusetts, have invented a new and useful Apparatus for Generating Heat for Culinary or various other Purposes; and I do hereby declare the same to be fully described in the following specification, and represented in the accompanying drawings, of which—

Figure 1 is a top view, and Fig. 2 a vertical section, of such apparatus.

My invention is intended for the production of great heat from the combustion of liquid hydrocarbons, particularly petroleum, or what is usually termed "coal-oil" or "coal-naphtha." Heretofore it has been customary to mix air with a combustible gas or vapor, and to pass the mixture through a foraminous diaphragm and burn it thereon, the result being a blue and non-illuminating flame of great heating power. My invention causes air to be mixed and burned with the flame of the gas generated by the combustion of a liquid hydrocarbon contained in the wick of an Argand lamp or burner.

The nature of the Argand lamp is well understood, it being a lamp whose wick is tubular, and when on fire is supplied both internally and externally with currents of air.

In the drawings, A denotes an Argand lamp, of which *a* is the wick-tube, which is attached to the bottom of the lamp-reservoir *b*, and is open at both ends. It leads out of the bottom of the lamp in order that when the lamp is in use air may rush freely into the lower end of the tube and pass up through the tube and into the flame of the wick *c* thereof. The wick-tube *a* I surmount with what I term the "internal-air-current foraminous disseminator," B, which is a hollow cylinder fitting into or on the tube and covered at top by a close or a foraminous cap, *d*, the sides of such cylinder being foraminous. Another such air-current disseminator, C, is or may be applied to the lamp, and so as to surround and extend above the wick in manner as shown in the drawings. This latter aerial current disseminator is open at top, and its sides are foraminous. Furthermore, the said Argand lamp, with its additions, as described, is combined with a stove or stand, D, or is arranged within

the same, as shown in the drawings, such stove or stand being for the purpose of supporting over the burner one or more culinary vessels or articles to be heated. Extending upward from the lamp body, and surrounding the outer aerial-current foraminous disseminator, is a tubular heat-interceptor, E, whose sides are foraminous or perforated in order that air for the external surface of the wick-flame may pass through such sides and into and up through the said interceptor. This heat-interceptor is for the purpose of arresting the heat radiated laterally from the flame of the wick, and causing such heat to pass upward in order that it may be utilized to advantage.

The wick may have the usual appliances for elevating or depressing it.

In the operation of my invention the air for the inner surface of the flame will be disseminated laterally into the flame and through the numerous small orifices of the disseminator B. This air, mixing with the flame or the combustible gaseous products resulting from the liquid that may be contained in the wick, will aid in rendering such flame non-luminous and of increased heating power. So, with respect to the action of the external aerial foraminous disseminator, C, the air for the outer surface of the flame will rush through the meshes or fine holes of such disseminator C and into the flame, and by mingling therewith will be burned with the gaseous products of combustion of the oil of the wick and aid in rendering such flame non-luminous and of increased heating power.

I am aware that a perforated or foraminous tube or chimney has been used with an air and gas mixer as well as with an air and combustible vapor-mixer, such as are supplied with a foraminous diaphragm for the mixture to flow through and be burned on. Therefore I do not claim such as my invention, as there are between it and mine material differences in construction and operation, as in the carrying out of my invention or improvement a wick and an Argand lamp become essential thereto, such being used to produce flame by the combustion of a liquid hydrocarbon contained in the lamp and wick. The flame, instead of being luminous and of little heating power, is by the numerous aerial jets discharged into it laterally changed into flame

not luminous, but possessing large heating powers—that is to say, there is so much oxygen combined with the hydrogen and carbon when burned in a fluid state that combustion of the carbon becomes complete, and the result is a great increase of heat with no smoke. In this way hydrocarbons may be utilized for cooking purposes, as well as for generating heat for various other purposes or uses, and I am enabled to entirely dispense with the usual contrivance employed for the reduction of a hydrocarbon to a vapor preparatory to being mixed and combined with air. The inner foraminous disseminator may be provided with a thick and solid head, which may be made of metal or some material not easily destroyed or injured by heat. Such a form or construction of the disseminator I have represented in Figs. 3 and 4, the first of the said figures being an external view, and the second a vertical section of the disseminator. In these figures the solid elongated head is represented at *k*. The oil-reservoir may extend around the burner, or may be otherwise arranged in any well-known manner for conducting oil to the wick.

I claim—

1. The combination of the internal-air-current foraminous disseminator B with the Argand lamp or burner A.

2. The combination of the external-air-current foraminous disseminator C with the Argand lamp or burner A.

3. The combination of the external-air-current foraminous disseminator C with the Argand lamp or burner A and the internal-air-current foraminous disseminator B.

4. The combination of the heat-interceptor E with the Argand lamp or burner A and one or more foraminous disseminators arranged with the wick, substantially as described.

5. The combination of a lamp or burner, A, and one or more foraminous air-disseminators with a stove or stand, D, for supporting a vessel or article to be heated by such burner, the whole being arranged substantially as described.

6. The foraminous disseminator as made with the solid and extended head *k*, substantially as described.

7. The combination of one or more air-current foraminous disseminators with a wick and a tube applied to a vessel for containing a combustible liquid to be taken up by or received into and burned on the said wick.

OSCAR F. MORRILL.

Witnesses:

R. H. EDDY,

F. F. HALE, Jr.