No. 855,315. PATENTED MAY 28, 1907.

A. H. HUMPHREY.

GAS LAMP.

APPLICATION FILED JUNE 25, 1906.

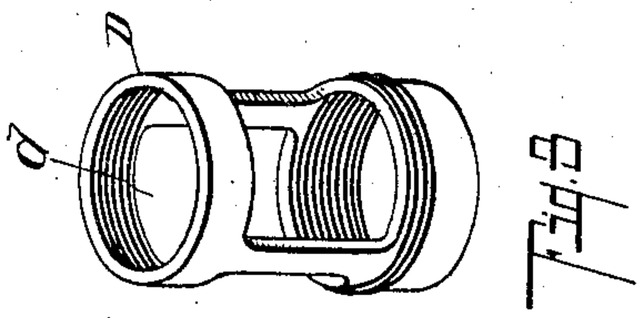

Fig. 3

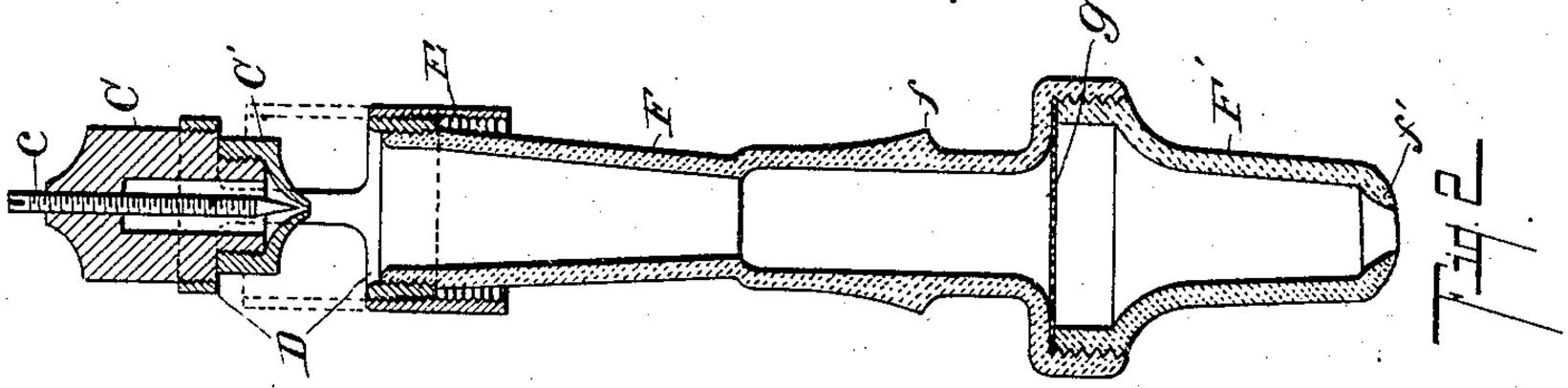

Fig. 2

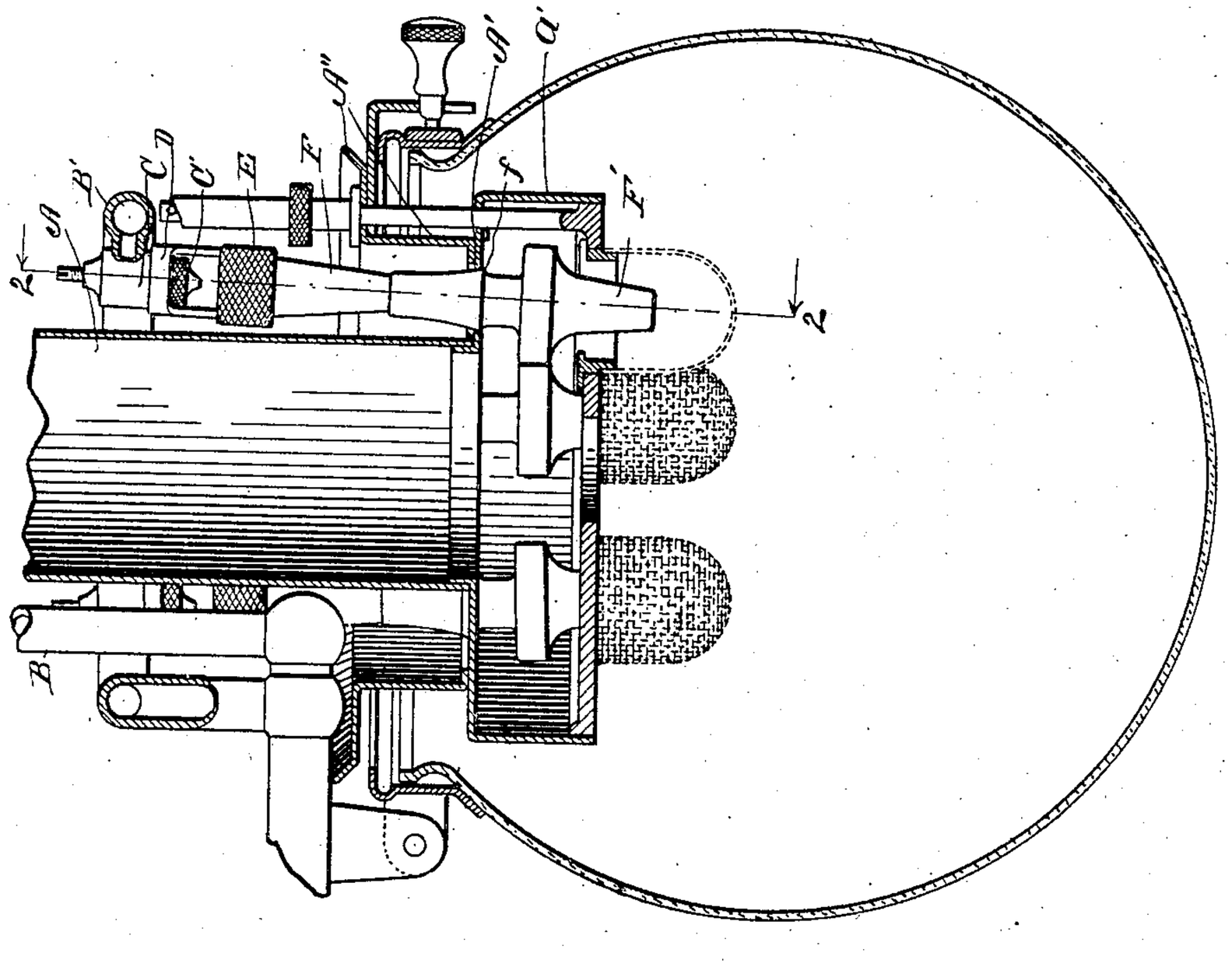

Fig. 1

Witnesses:
Lulu G Greenfield
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Inventor,
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UNITED STATES PATENT OFFICE.

ALFRED H. HUMPHREY, OF NEW YORK, N. Y.

GAS-LAMP.

No. 855,315. Specification of Letters Patent. Patented May 28, 1907.

Application filed June 25, 1906. Serial No. 323,319.

To all whom it may concern:

Be it known that I, ALFRED H. HUMPHREY, a citizen of the United States, residing at New York, county of New York, and State of New York, have invented certain new and useful Improvements in Gas-Lamps, of which the following is a specification.

This invention relates to improvements in gas lamps.

The objects of this invention are, first, to provide an improved gas lamp having inverted burners in which the parts of the lamp above the burner are protected so as not to be unduly heated by the burners, and one in which the gas is not unduly heated before reaching the burner tips. Second, to provide an improved gas lamp having an inverted burner, in which the heat of the gas is not conducted away from the burner, but is largely utilized in heating the mantle. Third, to provide an improved inverted burner for gas lamps, by which the fluctuation of the flame about the burner tip is largely overcome.

Further objects, and objects relating to structural details, will definitely appear from the detailed description to follow.

I accomplish the objects of my invention by the devices and means described in the following specification.

The invention is clearly defined and pointed out in the claims.

A structure embodying the features of my invention is clearly illustrated in the accompanying drawing forming a part of this specification, in which,

Figure 1 is a vertical section of a structure embodying the features of my invention, portions being shown in full lines to better illustrate their form. Fig. 2 is an enlarged vertical section taken on a line corresponding to line 2—2 of Fig. 1 looking in the direction of the little arrows at the ends of the section lines. Fig. 3 is a perspective view of the coupling section D of the burner tube.

In the drawing, similar letters of reference refer to similar parts throughout the several views.

Referring to the drawing, in the structure illustrated, the burners are grouped about a central chimney A having an outwardly projecting flange A′ at its lower end. The flange A′ is provided with a down-turned rim *a*′. This general arrangement is preferably that shown in my two applications for Letters Patent filed concurrently herewith. In the structure illustrated, the burners are connected to the gas delivery ring B′ which is connected to the gas supply pipe B.

The burners are preferably suspended from the nipples C in the gas delivery ring, the nipples being preferably arranged on the inside thereof, as illustrated. The burner tube F is preferably connected to the nipple C by the coupling section D, which is threaded upon the nipple and is also threaded to receive the tube F as clearly appears in Figs. 2 and 3. The tube section D is provided with large openings *d* through which the nozzle C′ may be inserted and manipulated for arranging the same upon the nipple C. The nipple C is shouldered and threaded to receive this nozzle independently of the burner tube, so that it may be removed or put in position without in any wise disturbing the remaining parts of the burner.

A needle valve *c* is provided for regulating the discharge of the nozzle, the valve *c* being preferably threaded through the nipple as is illustrated.

A sleeve-like valve E is threaded upon the tube section D and adapted to be adjusted over the openings *d* to regulate the air and to permit the full opening of these openings to allow the manipulation of the nozzle. The tube section F is arranged through the flange A′ of the chimney and is provided with a tapered portion *f*, which, when the tube is inserted through the opening of the plate or flange, effectively seals the opening.

The burner tip F′ is threaded into the burner tube so that it may be removed or adjusted as desired. Also, it is a convenience in manufacturing to form the parts in pieces. The burner tip gradually tapers downwardly, and is provided with an inverted flange *f*′ at its mouth arranged to restrict or reduce the delivery opening thereof.

It is found in practice that the tendency of inverted burners is for the flame to fluctuate and be unsteady, due to the tendency of the flame to creep back into the burner. By restricting or reducing the delivery opening of the burner, as I have illustrated, this tendency is largely overcome. It is found in practice that the heat from the burners heats the parts of the lamp above, and not only makes it very difficult, if not impossible, to adjust and manipulate the valves and other parts when the lamp is burning, but greatly detracts from the candle power of the lamp, by what I believe to be a break-

ing down or chemical disintegration of the gas, also preventing the proper admixture of air with the gas and causing the deposit of carbon on the mantle and burner and adjacent parts of the lamp. This is particularly true where a group or cluster of burners is provided. All this is effectively overcome by arranging the burner tube through the wall of the chimney, with the burner tip below and valves outside of the chimney, and by forming the tube F of a material which is a nonconductor of heat, such as magnesia, lavite, or some equivalent nonconducting material. The burner tip F′ is also preferably formed of magnesia or similar nonconducting material, as it does not become coated with carbon, or if it should become coated, the carbon burns off therefrom. By forming the tube F of a material which is a nonconductor of heat, the heat is not conducted away from the burner tip to the other parts of the lamp, and in addition to this, the heat is kept at the burner tip where it is effective for heating the mantle.

By arranging the burners through the wall of the chimney, the heated gases are carried away from the parts of the lamp which it is desired to protect. The plate or deflector through which the burner tube is arranged need not of necessity be in the form of a flange on a chimney as I have illustrated, although I prefer it in that form and relation.

While my improved burner is particularly designed and adapted for use in connection with my improved construction of the lamp illustrated, it is evident that it is of advantage for use in other relations.

I have illustrated and described my improved structure in detail in the form preferred by me on account of the structural simplicity and convenience in manipulating. I am aware, however, that it is capable of considerable variation in structural detail without departing from my invention.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In a gas lamp, the combination with a gas delivery pipe, of a chimney having an outwardly projecting flange at its lower end, said flange having an opening therethrough; a threaded nipple on said pipe; an inverted burner consisting of a burner tube formed of a material which is a non-conductor of heat, said tube having an upwardly tapered portion arranged through said opening in said flange; a burner tip; a coupling section into which said burner tube is threaded, upon said nipple, said coupling section having air openings therein; and a sleeve-like valve for said air openings threaded upon said coupling section, for the purpose specified.

2. In a gas lamp, the combination with a gas delivery pipe, of a chimney having an outwardly projecting flange at its lower end, said flange having an opening therethrough; a threaded nipple on said pipe; an inverted burner consisting of a burner tube formed of a material which is a non-conductor of heat arranged through said opening in said flange; a burner tip; a coupling section into which said burner tube is threaded, upon said nipple, said coupling section having air openings therein; and a sleeve-like valve for said air openings threaded upon said coupling section, for the purpose specified.

3. In a gas lamp, the combination with a gas delivery pipe, of a chimney having an outwardly projecting flange at its lower end, said flange having an opening therethrough; a threaded nipple on said pipe; an inverted burner consisting of a burner tube formed of a material which is a non-conductor of heat arranged through said opening in said flange; a burner tip; a coupling section into which said burner tube is threaded upon said nipple, said coupling section having air openings therein, for the purpose specified.

4. In a gas lamp, the combination with a gas delivery pipe, of a chimney having an outwardly projecting flange at its lower end, said flange having an opening therethrough; an inverted burner consisting of a burner tube formed of a material which is a non-conductor of heat arranged through said opening in said flange; and a burner tip, for the purpose specified.

5. In a gas lamp, the combination with a gas delivery pipe, of a chimney and inverted burner tube formed of a non-heat-conducting material arranged through the wall of the chimney with its valve outside thereof; and a burner tip for said burner tube, for the purpose specified.

6. In a gas lamp the combination with a gas delivery pipe, of a chimney having an outwardly projecting flange at its lower end, said flange having an opening therethrough; a threaded nipple on said pipe; an inverted burner consisting of non-heat-conducting material arranged through said opening in said flange and adapted when in position to close the same; a coupling section into which said burner tube is threaded, adapted to connect the same to said nipple, and a burner tip.

7. In a gas lamp the combination with a gas delivery pipe, of a chimney having an outwardly projecting flange at its lower end, said flange having an opening therethrough; an inverted burner consisting of a burner tube formed of non-heat-conducting material arranged through said opening in said flange to close the same, and a burner tip arranged below said flange for the purpose specified.

8. In a gas lamp, the combination with a gas delivery pipe, of a chimney having an outwardly projecting flange at its lower end, said flange having an opening therethrough;

a threaded nipple on said pipe; an inverted burner consisting of a burner tube, said tube having an upwardly tapered portion arranged through said opening in said flange; a burner tip; a coupling section into which said burner tube is threaded upon said nipple, said coupling section having air openings therein; and a sleeve-like valve for said air openings threaded upon said coupling section, for the purpose specified.

9. In a gas lamp, the combination with a gas delivery pipe, of a chimney having an outwardly projecting flange at its lower end, said flange having an opening therethrough; a threaded nipple on said pipe; an inverted burner consisting of a burner tube arranged through said opening in said flange; a burner tip; a coupling section into which said burner tube is threaded upon said nipple, said coupling section having air openings therein; and a sleeve-like valve for said air openings threaded upon said coupling section, for the purpose specified.

10. In a gas lamp, the combination with a gas delivery pipe, of a chimney having an outwardly projecting flange at its lower end, said flange having an opening therethrough; a threaded nipple on said pipe; an inverted burner consisting of a burner tube arranged through said opening in said flange; a burner tip; a coupling section into which said burner tube is threaded upon said nipple, said coupling section having air openings therein, for the purpose specified.

11. In a gas lamp, the combination with a gas delivery pipe, of a chimney having an outwardly projecting flange at its lower end, said flange having an opening therethrough; a threaded nipple on said pipe; an inverted burner arranged through said opening in said flange and adapted when in position to close the same; a coupling section into which said burner tube is threaded, adapted to connect the same to said nipple, and a burner tip.

12. In a gas lamp, the combination with a gas delivery pipe, of a chimney having an outwardly projecting flange at its lower end, said flange having an opening therethrough; an inverted burner consisting of a burner tube arranged through an opening in said flange to close the same, and a burner tip arranged below said flange, for the purpose specified.

In witness whereof, I have hereunto set my hand—and seal—in the presence of two witnesses.

ALFRED H. HUMPHREY. [L. S.]

Witnesses:
J. P. CONROY,
E. D. JUNIOR.