

No. 845,186.

PATENTED FEB. 26, 1907.

C. M. LUNGREN.
GAS LAMP.

APPLICATION FILED MAY 6, 1905.

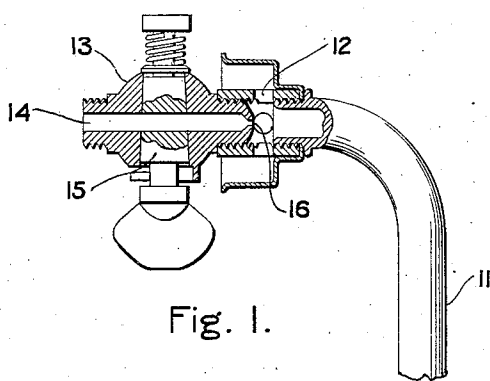


Fig. 1.

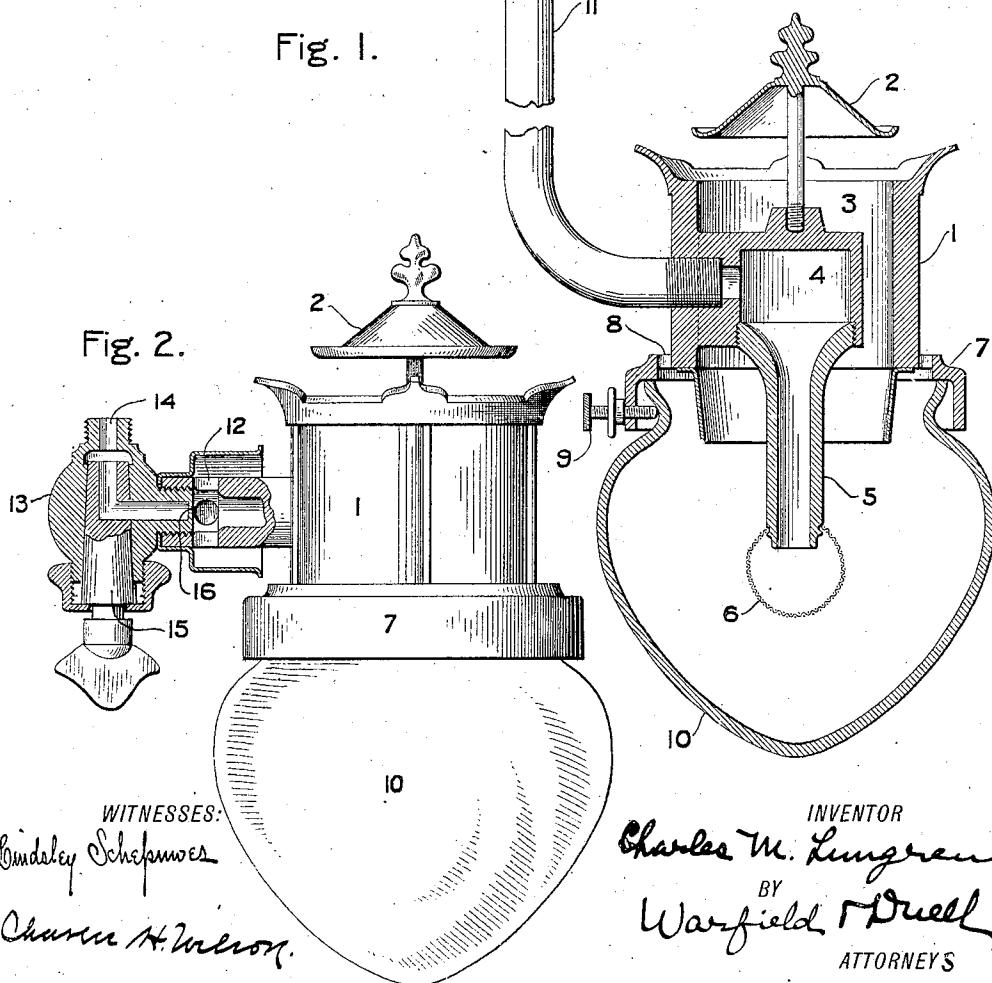


Fig. 2.

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GAS-LAMP.

No. 845,186.

Specification of Letters Patent.

Patented Feb. 26, 1907.

Application filed May 6, 1905. Serial No. 259,170.

To all whom it may concern:

Be it known that I, CHARLES M. LUNGREN, residing at Bayonne, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Gas-Lamps, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to gas-lamps and the like, and is especially adapted for use in connection with car-lighting systems, although capable of use as to various features in a variety of relations.

One of the objects thereof is to provide a device characterized by increased efficiency, simplicity, and convenience.

Another object is to provide a device in which the heat generated by the combustion of the gas in the lamp is employed to raise the temperature of the burning mixture before it is conducted into the mixing-chamber.

Another object is to so construct a gas-lamp that the air-inspirator device is in proximity to the lamp or within the effective zone or sphere of influence of radiant heat emitted by the body of the lamp.

Other objects will be in part obvious and in part pointed out hereinafter.

The invention accordingly consists in the features of construction, combination of elements, and arrangements of parts which will be exemplified in the device hereinafter described and the scope of the application of which will be indicated in the following claims.

In the accompanying drawings, Figure 1 represents a partly-sectional elevation of one embodiment, and Fig. 2 a partly-sectional elevation of another of the various possible embodiments of my invention.

Similar reference characters refer to similar parts throughout the figures of the drawings.

As tending to render better understood certain features of my invention, it may be here noted that the invention is shown in connection with gas-lamps provided with an incandescent mantle, which consume in their operation a mixture of gas and air. The lamps are therefore provided with an inspirator device wherein a jet of gas is projected across an air-inlet opening for the purpose of drawing in suitable quantities of air by in-

spiration to be mixed with the said gas and constituting the burning mixture. It is well known that a mixture of gas and air is more readily combustible when the same is heated, and in prior constructions now in general use imperfect combustion has often resulted by reason of the burning mixture reaching the point of combustion without being sufficiently raised in temperature, resulting in a less amount of illumination and causing the products of such imperfect combustion to be deposited upon the mantle, lessening its efficiency and producing other equally disastrous results.

The above and other defects are eliminated in constructions of the nature of that herein-after described. Referring to the drawings, the lamp-body 1, surmounted by deflector 2 and provided with a passage-way 3 to accommodate the products of combustion, has a mixing-chamber 4 arranged therein, designed to deliver gas into the burner-nozzle 5, which nozzle has suitably secured thereto a pendent mantle 6. By the term "burner-nozzle," as herein used, I mean that part of the device at which combustion takes place. A flanged member 7, provided with air-inlet passages 8, is secured to the body of the lamp and supports by suitable means, as a set-screw 9, a detachable translucent dome 10. While in this embodiment of my invention I have employed a lamp of the type above described, I wish it to be understood that I do not intend to limit myself to that type, nor, in fact, to any particular form of lamp, it being equally applicable to constructions where it is desirable to heat the gas before the same is burned. The mixing-tube 11 leads into the mixing-chamber and is provided with an air-inlet aperture 12 and a shield suitably secured thereto, extending over the air-inlet aperture 12 and having a bell-shaped mouth, and which is designed to form a passage-way for leading air to the said air-inlet aperture 12. A fixture 13, having a gas-supply conduit 14 and provided with gas-regulating means 15, leads into the mixing-tube and has in its inner extremity a small opening 16, located adjacent the air-inlet aperture 12. The apertured end of this fixture and the air-inlet aperture of the mixing-tube form what may be termed an "inspirator," the purpose of which has been above described.

In Fig. 1 I have shown the inspirator arranged above and to the side of the lamp, while in Fig. 2 the same is shown adjacent the body of the lamp. I do not intend, however, to limit myself to any particular location of the inspirator in respect to the lamp, it only being requisite for the operation of my invention that said inspirator be located within the effective zone or sphere of the influence of radiant heat emitted by said lamp, or in such position as to be within the range of the heated ascending products of combustion. While in the construction illustrated and described herein I have shown a mixing-chamber of substantial size and mixing-tube leading thereinto at an angle or out of alinement with the burner-nozzle, I desire it to be understood that I do not herein claim a lamp structure embodying such features of construction, they being described and claimed in an application, Serial No. 259,156, filed May 6, 1905, by Robert M. Dixon.

With the several parts arranged substantially as described the operation of these embodiments of my invention is as follows: The combustion of gas in the lamp causes radiant heat to be emitted by the body of the lamp, and the inspirator being located within the effective zone or sphere of influence of said heat it becomes heated, resulting in a raise of temperature of the burning mixture located therein. In the embodiment shown in Fig. 1 the heated products of combustion, together with the radiant heat emitted by the lamp, operate to heat the mixing air and gas. It will thus be seen that I have constructed a simple and inexpensive apparatus wherein the heat generated by the combustion is advantageously employed to raise the temperature of the burning mixture, resulting in an increased efficiency of the lamp and insuring a more complete combustion. The employment of my invention is, however, not limited to the structures above described, but is equally applicable to any construction where it is desired to raise the temperature of gas and increase its readiness and completeness of combustion.

As many changes could be made in the above construction and many apparently widely different embodiments of my invention could be made without departing from the scope thereof, I intend that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

I desire it also to be understood that the language used in the following claims is intended to cover all of the generic features of

the invention herein described and all statements of the scope of the invention, which, as a matter of language, might be said to fall therebetween.

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

1. In a device of the class described, in combination, an annular lamp-body terminating at its lower end in a depending guide, a mixing-chamber positioned centrally within said body and having a conduit leading downwardly therefrom and terminating a short distance below said guide, and a means for conveying combustible gases into said mixing-chamber.

2. In a device of the class described, in combination, an annular lamp-body terminating at its lower end in a depending guide, a mixing-chamber positioned centrally within said body and having a conduit leading downwardly therefrom and terminating a short distance below said guide, a means for conveying combustible gases into said mixing-chamber, and a globe arranged to deflect air downwardly toward the lower end of said first-mentioned conduit.

3. In a device of the class described, in combination, a lamp-body having a channel leading therethrough, a burner-nozzle extending downwardly from said lamp-body, a guide extending downwardly from said lamp-body and terminating a short distance above the end of said nozzle and adapted to direct the products of combustion therefrom into said channel, and an injector positioned exteriorly of said lamp-body out of the path of the escaping products of combustion and arranged to deliver combustible gases into said mixing-chamber.

4. In a device of the class described, in combination, a lamp-body, an exterior injector, an expansion-chamber within said body and in communication with said injector, and located directly in the path of and adapted to be raised in temperature by the products of combustion, means producing products of combustion underlying said expansion-chamber and in communication therewith, a globe arranged to deflect a current of fresh air downward toward said producing means, and a guide interposed between the discharging products of combustion and the incoming fresh air.

In testimony whereof I affix my signature in the presence of two witnesses.

CHARLES M. LUNGREN.

Witnesses:

A. C. MOORE,
ELMER E. ALBEE.