

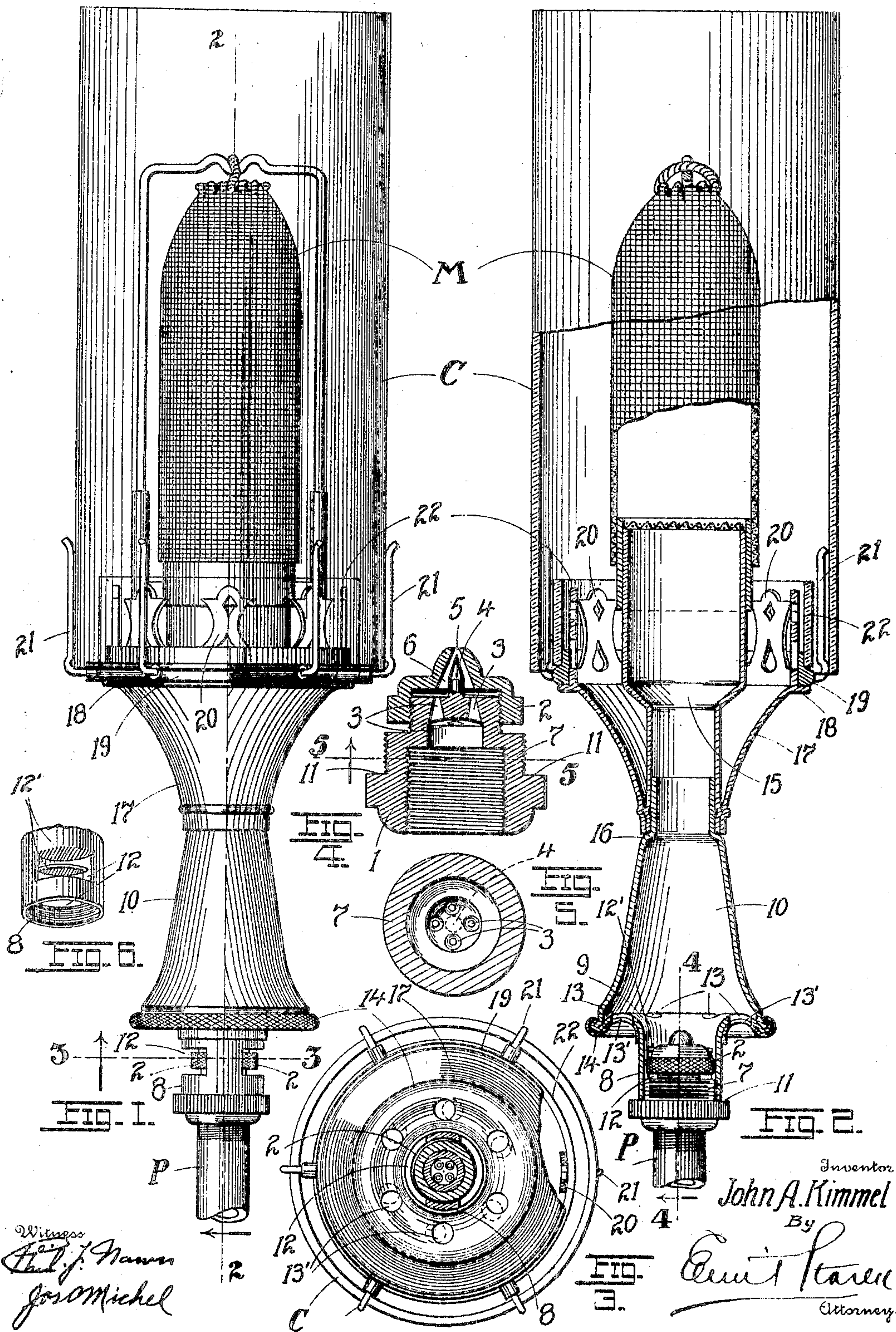
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PATENTED AUG. 22, 1905.

J. A. KIMMEL.

GAS BURNER.

APPLICATION FILED APR. 6, 1905.



UNITED STATES PATENT OFFICE.

JOHN A. KIMMEL, OF ST. LOUIS, MISSOURI.

GAS-BURNER.

No. 797,691.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOHN A. KIMMEL, a citizen of the United States, residing at St. Louis, State of Missouri, have invented certain new and useful Improvements in Gas-Burners, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention has relation to improvements in gas-burners for incandescent or Welsbach lamps; and it consists in the novel construction of burner more fully set forth in the specification and pointed out in the claims.

In the drawings, Figure 1 is an elevation of an incandescent lamp having my invention applied thereto. Fig. 2 is a vertical section on line 2 2 of Fig. 1. Fig. 3 is a horizontal section on line 3 3 of Fig. 1 looking up. Fig. 4 is a vertical sectional detail of the gas-regulating valve and casing on the line 4 4 of Fig. 2. Fig. 5 is a horizontal section on line 5 5 of Fig. 4, and Fig. 6 is a perspective detail of the neck of the mixing-chamber.

The object of my invention is to construct a burner for incandescent lamps which will accurately control the admission of air and gas to the burner proper, one in which the flame will be unaffected by any undue drafts of air, making the burner specially available for outdoor lamps, one which will effectively shut out any air-drafts tending to disturb the incandescent mantle, one which will insure the delivery of a positive stream of gas to the burner, and one possessing further and other advantages better apparent from a detailed description of the invention, which is as follows:

Referring to the drawings, P represents the gas-pipe, to which the valve-casing 1 of the gas-regulating valve 2 is secured. The upper reduced end of the casing 1 is provided with a series of tapering ports 3, converging toward the base of the central terminal conical stem 4, said stem controlling the discharge-orifice 5, leading from the conical chamber 6 of the valve which receives said stem. The casing 1 is provided with an intermediate screw-threaded portion 7, the diameter of whose cross-section is slightly in excess of that of the milled base of the valve 2, said portion 7 being adapted to receive the reduced neck or stem 8, depending from the base 9 of the conical mixing-chamber 10, the said neck being screwed down to and against the annular shoulder 11, formed at the base of the casing 1. In order to permit adjustment of the valve

2 to and from the stem 4, (whereby the discharge of gas through the orifice 5 is accurately regulated,) suitable sections of the peripheral wall of the neck 8 are removed, leaving openings 12 12 for the passage of the milled base of the valve 2, making the latter accessible to the thumb and forefinger of the operator, by which the regulation of the valve is most conveniently effected. The upper edge of each opening 12 is provided with an inwardly-deflected lip 12', which serves to arrest the valve and prevents its accidental unscrewing off the valve-casing.

The base 9 of the mixing-chamber 10 bulges inwardly, the parts 8, 9, and 10 being spun from two pieces of metal. The inward bulge of the base brings the air-openings 13, with which said base is provided, into a position or plane above the lower edge of the mixing-chamber—that is to say, the lower edge of the mixing-chamber overhangs the air-openings 13 leading thereto. The object of this construction is to place these openings well out of the influence of any draft, and thus avoid the disturbance of the normal and uniform flow of the combustible mixture of gas and air through the chamber. The openings 13 are regulated by the rotatable air-gate 14, mounted loosely about the neck 8 of the mixing-chamber, the upper milled edge of the gate being loosely crimped over the folded edge formed between the chamber 10 and its base 9. The gate is provided with openings 13', which may be brought to register with the openings 13, thus freely admitting the full quantity of air into the mixing-chamber, there to mix with the gas issuing from the orifice 5. By giving the gate 14 the necessary turn the admission of air into the mixing-chamber can be accurately adjusted.

Adapted to be coupled to the mixing-chamber is the base of the burner-tube 15, the latter being passed over the upper reduced end of the chamber and resting against the annular shoulder 16, formed at the base of such reduced end. Flaring upwardly from the base of the burner-tube 15, and preferably crimped thereto, is a chimney-supporting shell or wall 17 of substantially similar contour with the mixing-chamber 10, the two thus connected presenting an artistic appearance. The upper edge of the shell 17 is provided with an annular ledge 18 for the support of a detachable ring 19, the ring being slipped over a series of spring lobes or arms 20, bounding the inner circle of the ledge. Disposed along

the outer edge of the ring 19 are a series of spring members or arms 21, serving to envelop the chimney C, the lower edge of the chimney resting on the inwardly-bent basal portions of the members 21. The ring 19 is adapted to support a transparent (preferably glass) annular shield or band 22, slipped over the lobes 20, this shield preventing any drafts or air-currents from impinging against the incandescent mantle M, suspended over the burner 15. Any currents that might strike the base of the chimney will be simply carried upward between the chimney and shield 22 in a direction substantially parallel to the chimney-walls and leave the mantle undisturbed.

From the foregoing, therefore, it will be seen that not only do I make necessary provision against the impact of drafts of air upon the mantle and upon the uniform flow of the mixture passing through the mixing-chamber, but I provide the burner with a valve which can be adjusted with nicety, the whole forming a superior gas-burner construction. I may of course depart in a measure from the details here shown without in any wise affecting the nature or spirit of my invention.

Having described my invention, what I claim is—

1. In a gas-burner, a mixing-chamber having a base provided with air-openings, said openings being disposed relatively above the lower edge of the chamber, a central neck depending from the base, a gas-regulating valve secured to the neck, and an air-gate for controlling the openings leading to the mixing-chamber, substantially as set forth.

2. In a gas-burner, a conical mixing-chamber having a base removed a suitable distance from the lower edge of the cone toward the apex thereof, and provided with a series of air-openings, a central neck depending from the base, a valve-casing adapted to couple to said neck, the latter having sections of its peripheral wall removed therefrom leaving suitable openings, and a rotatable valve on the casing having portions exposed through said openings whereby the same may be seized and operated, substantially as set forth.

3. In a gas-burner, a suitable mixing-chamber, a neck depending from the base thereof, the latter having a series of gate-controlled air-openings disposed around the neck and leading into the chamber, a valve-casing having an intermediate screw-threaded portion for coupling to the base of the neck, an upper

reduced screw-threaded portion terminating in a conical stem, the chamber of the valve-casing having a series of tapering ports converging and discharging toward said conical stem, a valve mounted on the said reduced screw-threaded portion of the casing, and having a discharge-orifice controlled by said conical stem of the casing, the depending neck of the mixing-chamber having sections of its wall removed to afford access to the valve whereby the latter may be manipulated, substantially as set forth.

4. In a gas-burner, a mixing-chamber provided with air-openings at the bottom of the chamber, the lower edge of the walls of the chamber overhanging the bottom and openings formed therein, substantially as set forth.

5. In a gas-burner, a suitable mixing-chamber having a burner-tube coupled thereto and forming an extension thereof, an upwardly-flaring wall or shell carried by the burner, an annular ledge at the upper end of the shell, a ring resting on the ledge, a series of spring-arms inclosing a chimney resting at the bases of the arms, a series of spring lobes or arms disposed along the inner circle of the ledge, and an annular shield enveloping the lobes and resting on the ring, substantially as set forth.

6. In a gas-burner, a conical mixing-chamber having an inwardly-bulging base or bottom provided with air-openings, a central depending neck formed with the bottom, and an air-gate rotatable about the neck, and having its upper edge loosely crimped about the lower edge of the conical walls of the mixing-chamber, and freely rotatable about the same, substantially as set forth.

7. In a gas-burner, a mixing-chamber having a base provided with air-openings, a central neck depending from the base, a valve-casing coupled to the neck, the latter having sections of its peripheral wall removed therefrom leaving openings, a rotatable valve on the casing having portions exposed through said openings, the latter having upper inwardly-deflected lips for arresting the valve against accidental unscrewing, substantially as set forth.

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

JOHN A. KIMMEL.

Witnesses:

EMIL STAREK,
JOS. A. MICHEL.