No. 720,275. PATENTED FEB. 10, 1903.

U. S. McCORMICK.

GAS BURNER.

APPLICATION FILED NOV. 7, 1902.

NO MODEL.

Fig. 1.

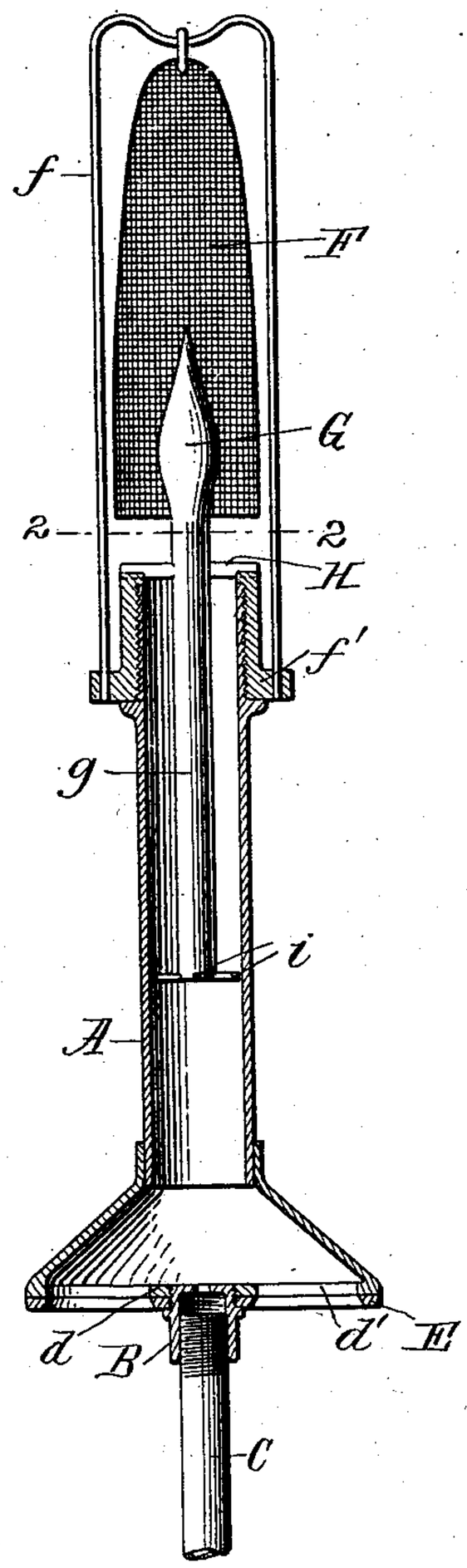


Fig. 2.

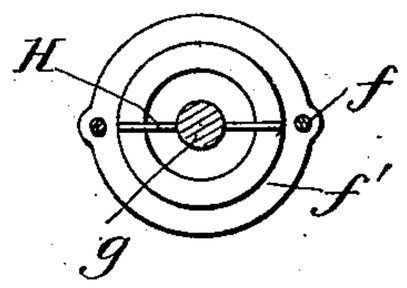


Fig. 3.

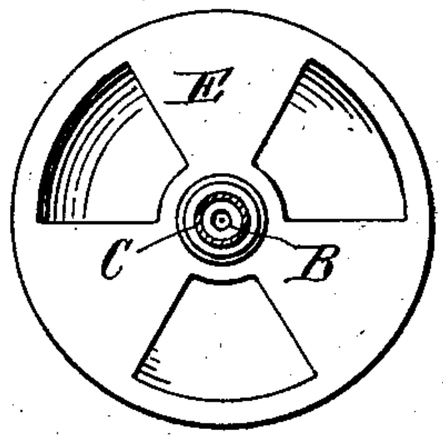
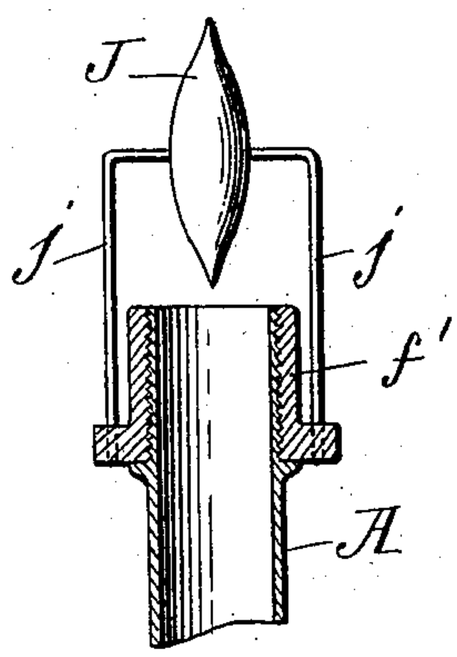


Fig. 4.



Witnesses,
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UNITED STATES PATENT OFFICE.

ULYSSES S. McCORMICK, OF BUFFALO, NEW YORK, ASSIGNOR TO WHITE LIGHT BURNER COMPANY, OF BUFFALO, NEW YORK, A FIRM.

GAS-BURNER.

SPECIFICATION forming part of Letters Patent No. 720,275, dated February 10, 1903.

Application filed November 7, 1902. Serial No. 130,429. (No model.)

To all whom it may concern:

Be it known that I, ULYSSES S. MCCORMICK, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented new and useful Improvements in Gas-Burners, of which the following is a specification.

This invention relates to an atmospheric gas-burner of that kind used in connection with an incandescent mantle or hood for illuminating purposes. As most commonly constructed burners of this type comprise an air and gas mixing tube over the mouth of which a hood or bell-shaped mantle is supported and which is made incandescent by the flame forming at the mouth of the tube within the mantle. In some of these burners the upper end of the mixing-tube is provided with a wire-gauze or perforated cap or end through which the gas passes and above which it burns, while in others, especially of the larger type, the upper end of the mixing-tube is left open or unobstructed to the free passage of the gas. The burner with the unobstructed mixing-tube produces a much hotter flame and raises the temperature of the mantle much higher, consequently producing a greater degree of incandescence and brighter light. The burners with the unobstructed mixing-tube, however, are objectionable for the reason that in operation a noise or blowing sound is produced by the current passing through the burner.

The object of the present invention is to provide the open-mouthed or unobstructed burner with means which will effectually prevent such objectionable noise and which at the same time will not appreciably obstruct the burner-mouth or lower the heating effect of the flame on the mantle. This is accomplished by supporting a contrivance or body centrally over and some distance above the mouth of the burner or mixing-tube.

In the accompanying drawings, Figure 1 is a longitudinal section through a burner embodying the invention. Fig. 2 is a transverse section in line 2 2, Fig. 1, showing the burner in plan. Fig. 3 is a bottom plan view of the burner, showing the gas-supply pipe in section. Fig. 4 is a longitudinal section showing a slightly-different arrangement of the muffler.

Like letters of reference refer to like parts in the several figures.

The burner is of old form and consists of an open-ended air and gas mixing tube A, the lower end of which is provided with a threaded and perforated nipple B for attaching it to the end of the gas-supply pipe C. The lower portion of the burner-tube shown is flared or enlarged and has an annular bottom *d*, provided with air-inlet openings *d'*.

E represents a rotary damper or valve arranged beneath the bottom *d* of the burner-tube and provided with openings adapted by the rotation of the damper to more or less obstruct the air-inlet openings in the bottom of the burner-tube and regulate the admission of air to the mixing-tube. The burner-tube may be formed and the admission of air regulated in any other preferred manner.

F represents the incandescent mantle or hood, which is of the usual type and which may be supported by any known or preferred means, such as a wire bail *f*, secured to a collar *f'*, screwed on the upper end of the burner-tube.

G represents the muffler or quieting contrivance, which consists of a body of some suitable material not readily consumed or altered in condition by the heat, such as metal or a refractory substance. The body is supported centrally over and some distance above the mouth of the burner, so as to be enveloped by the flame issuing from the burner and should be of such a shape as to cause the flame to spread somewhat laterally on all sides, and yet not change the direction of the flame so as to throw it outside of the incandescent mantle. The body which is shown in the drawings and which has given good results is bulb shaped in form, being circular in cross-section and flaring outwardly and upwardly on its lower side and tapering upwardly to its upper end. The body is supported by some convenient means which will offer but little resistance or obstruction to the flow of the gas and flame. As shown in Fig. 1, the body surmounts a vertical stem or rod *g*, which is arranged centrally in the

burner-tube, from which it is supported by a fine or thin transverse rod or bar H, which may simply rest on or be secured to the upper end of the burner-tube or the collar which supports the mantle. *i* represents fine or thin arms or projections which extend from the lower portion of the stem and bear against the interior wall of the burner-tube. These arms center and steady the stem in the burner-tube and prevent it from moving laterally. While this manner of supporting the body is at present deemed preferable, other suitable supporting instrumentalities may be employed.

In the construction shown in Fig. 4 the muffler J, which tapers from its central portion to points at its upper and lower ends, is supported by rods *j*, which rise from the mantle-supporting collar and are connected to the central portion of the muffler.

In operation the flame spreads and flows smoothly and quietly up around the muffler, following more or less the contour thereof, and the blowing or sputtering noise is practically, if not absolutely, stopped. The muffler arranged as described does not obstruct the flow of the gas and flame sufficiently to materially lessen the flame, and when it becomes heated it increases the brilliancy of the incandescent mantle.

I claim as my invention—

1. The combination with an atmospheric gas-burner, of a device for preventing noise in the operation of the burner, comprising a body which flares upwardly and outwardly from its lower end and tapers toward its upper end, and means for supporting said body centrally above the mouth of the burner, substantially as set forth.

2. The combination with an atmospheric burner, of a bulb-like body arranged centrally above the mouth of the burner, a supporting-stem for said body which is arranged centrally in the burner-tube, and means for supporting said stem, substantially as set forth.

3. The combination with an atmospheric burner, of a bulb-like body arranged centrally above the mouth of the burner, a supporting-stem for said body which is arranged centrally in the burner-tube, and a cross-bar for supporting said stem in the burner, substantially as set forth.

4. The combination with an atmospheric burner, and an incandescent mantle supported over the mouth of the same, of a bulb-like body arranged centrally above the mouth of the burner, a supporting-stem for the body which is arranged centrally in the burner-tube, and means for supporting said stem substantially as set forth.

5. A device for preventing noise in the operation of atmospheric gas-burners, comprising a body, and means for supporting the same centrally above and spaced from the mouth of the burner, substantially as set forth.

6. A device for preventing noise in the operation of atmospheric gas-burners, comprising a bulb-like body which flares outwardly and upwardly from its lower end and tapers toward its upper end, and means for supporting said body centrally above the mouth of the burner, substantially as set forth.

7. A device for preventing noise in the operation of atmospheric gas-burners, comprising a bulb-like body, a stem which projects from the lower end of said body and is adapted to be inserted centrally in the mouth of the burner, and means for supporting said stem from the burner, substantially as set forth.

Witness my hand this 4th day of November, 1902.

ULYSSES S. McCORMICK.

Witnesses:
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