No. 736,604. PATENTED AUG. 18, 1903.

W. KRAMER.

GAS TIP.

APPLICATION FILED SEPT. 27, 1901.

NO MODEL.

Fig. 1.

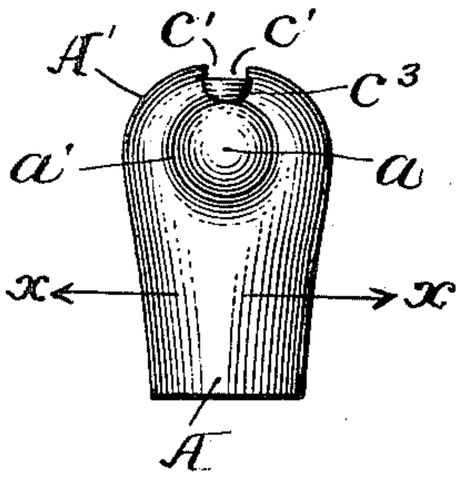


Fig. 2.

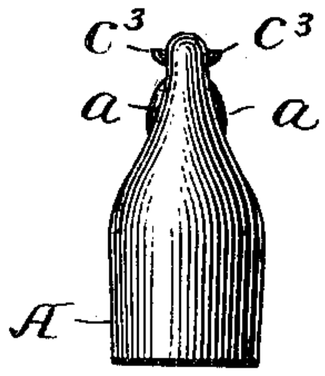


Fig. 4.

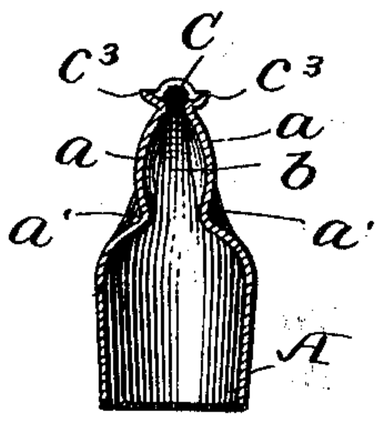


Fig. 3.

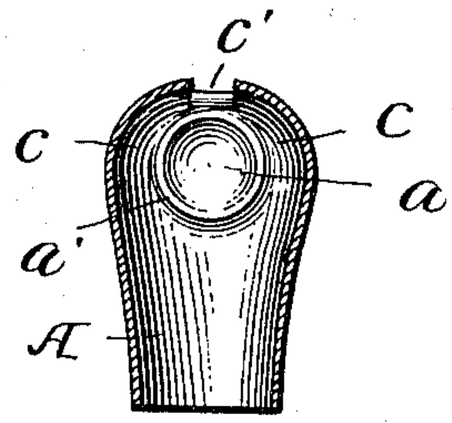


Fig. 5.

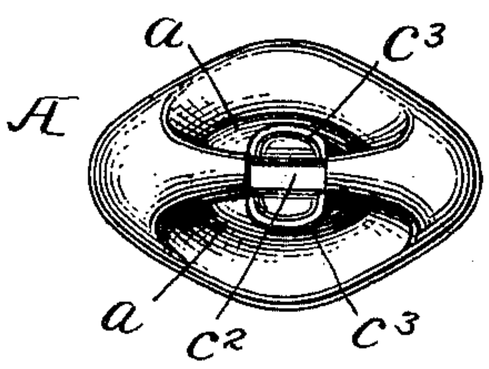
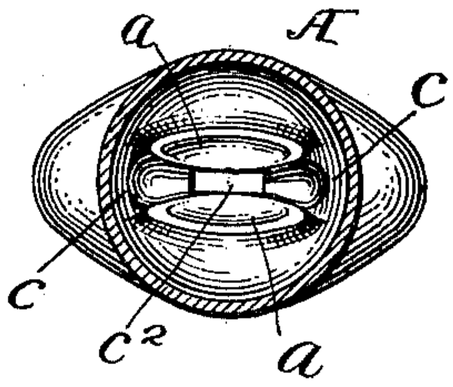


Fig. 6.



Witnesses
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No. 736,604. Patented August 18, 1903.

UNITED STATES PATENT OFFICE.

WILLIAM KRAMER, OF BROOKLYN, NEW YORK, ASSIGNOR TO GAS-TIP AND SELF-LIGHTER COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

GAS-TIP.

SPECIFICATION forming part of Letters Patent No. 736,604, dated August 18, 1903.

Application filed September 27, 1901. Serial No. 76,799. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM KRAMER, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Gas-Tips, of which the following is a specification.

This invention relates to gas tips or burners, and is more particularly an improvement upon the form of gas-tip shown and described in United States Patent No. 640,698, granted January 2, 1900, to William H. Porter for a gas-tip. In that patent a gas tip or burner is disclosed having two opposed gas-openings forming a continuation of an intermediate narrow slot and communicating with an inner chamber in the body of the burner, which chamber has two channels connected with said openings. The channels are formed by indenting the sides of the burner, and the gas-opening is formed between the indentures. The indentures are brought quite close together, so as to form a narrow passage between them, which communicates with the channels.

While various metals may be used in making the tip referred to above and also in making the improved tip to be described, it is preferred to use aluminium or some similar non-corrosive metal which will not be deleteriously affected by the gas and elements to which it is exposed.

It is well known that a considerable percentage of the gas employed as illuminating-gas is lost by what is commonly termed "blowing," where the gas escapes under pressure and is consumed rapidly, producing a high degree of heat, and a consequently low illuminating power, and even where the blowing is not audible and the flame remains fairly steady there is still a great portion of the flame which remains very pale, almost or quite invisible, adding little or nothing to the illuminating quality of the flame.

The object of this invention is to produce a tip which will in a large measure, if not entirely, prevent blowing of the flame, so that when used with high-pressure gas the flame gives a steady light.

I have found that by providing an intermediate chamber or reservoir directly beneath the gas-opening in the side channeled tip referred to above (which intermediate chamber communicates throughout with the side channels) blowing is almost entirely prevented. The chamber referred to is readily formed by a different manner of pinching the sides of the tip, so that instead of bringing the indentured sides of the tip close together outwardly-convex portions are made in the sides of the tip, the convex portions forming the intermediate chamber referred to. The convex portions are preferably circular, although they may be of any suitable shape and are formed in this instance by circular indentures or creases in the sides of an ordinary blank thimble for making tips.

Without attempting to formulate any exact theory to account for the unquestionable advantages of this improved gas-tip, at the same time it would seem that the intermediate chamber formed just beneath the gas-outlet acts as an expansion chamber or reservoir to check the flow of gas, and thus operates as a pressure-regulator.

This invention consists in the various features of construction, substantially as hereinafter more particularly set forth in the accompanying specification and drawings, in which—

Figure 1 is a side view of the improved gas-tip. Fig. 2 is an edge view of the same. Fig. 3 is a sectional side view of the gas-tip. Fig. 4 is an edge view thereof, partly in section. Fig. 5 is a top plan view of the gas-tip, and Fig. 6 is a sectional view on the line x x of Fig. 1 looking upward.

The gas-tip is formed from a thimble of metal, the general mode of forming the gas-tip being substantially as set forth in the patent above referred to.

Referring to the drawings, A represents the tapered body portion of the finished tip containing a chamber, and A′ is a dome-like portion, the sides of which are compressed or indented by suitable dies or tools, forming convex portions a just beneath the top of the dome. These convex portions a are preferably circular and are formed by creases a', the convex portions extending outwardly

from the creases and within the same, thus forming an intermediate chamber *b* between the gas-outlet C and the chamber in the body portion A of the tip. As in the patent referred to, the outer portions of the dome A′ form channels *c* between the dome and the convex portions *a*, these channels connecting the chamber in the body portion A with opposed openings *c*′ in the gas-outlet. The opposed openings *c*′ form a continuation of an intermediate narrow slot c^2. The advantages of this construction of channels and gas-outlet having opposed openings having been fully described in said United States Patent No. 640,698, this matter will not be again gone into. The improved tip, however, combines the advantages of the channeled tip with its peculiarly-formed gas-outlet and the advantages arising from the intermediate chamber or reservoir communicating with the channels and situated directly beneath the gas-outlet. In order to further steady the flame and cause convenience in manufacture, the sides of the gas-outlet are extended outwardly in the form of lips c^3, and these lips are preferably used on the gas-tip, although they may be dispensed with, if desired.

Without limiting myself to the precise details of construction shown and described, I claim, and desire to secure by Letters Patent, the following:

1. A gas tip or burner, consisting of a thimble having indentations in its sides, outwardly-convex portions within said indentations forming a chamber, and a gas-opening between said convex portions, substantially as set forth.

2. A gas tip or burner, consisting of a thimble having indentations in its sides, outwardly-convex portions within said indentations forming a chamber, a gas-opening between said convex portions, and lips extending from the sides of said opening, substantially as set forth.

3. A gas tip or burner, consisting of a thimble having circular indentations in its sides, outwardly-convex portions within said indentations forming a chamber, and a gas-opening between said convex portions, substantially as set forth.

4. A gas tip or burner, consisting of a thimble having circular indentations in its sides, outwardly-convex portions within said indentations forming a chamber, a gas-opening between said convex portions, and lips extending outwardly from the sides of said opening, substantially set forth.

5. A gas tip or burner, consisting of a thimble having circular outwardly-convex side portions forming a chamber, a gas-opening between said portions, and lips extending outwardly from the sides of the opening, substantially as set forth.

6. A gas tip or burner having two opposed openings in constant communication with an inner chamber having channels connected with said openings, and an intermediate expansion-chamber within the body of the burner beneath the openings and communicating within the inner chamber and channels, substantially as set forth.

7. A gas tip or burner having two opposed openings forming a continuation of an intermediate narrow slot and in constant communication with an inner chamber having two channels connected with said openings, and an intermediate expansion-chamber within the body of the burner beneath the slot and communicating with the inner chamber and the channels, substantially as set forth.

8. A gas tip or burner, consisting of a thimble having indentations in its sides, outwardly-convex portions within said indentations forming an expansion-chamber, two opposed gas-openings, and channels leading to said openings and communicating with the expansion-chamber, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM KRAMER.

Witnesses:
JOS. P. DUNN,
FRED. C. MEHLER.