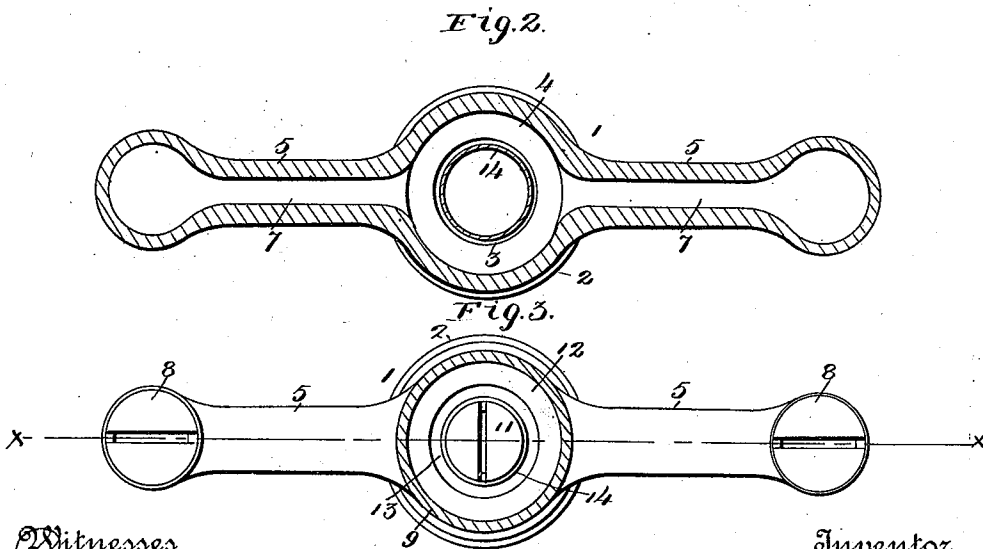
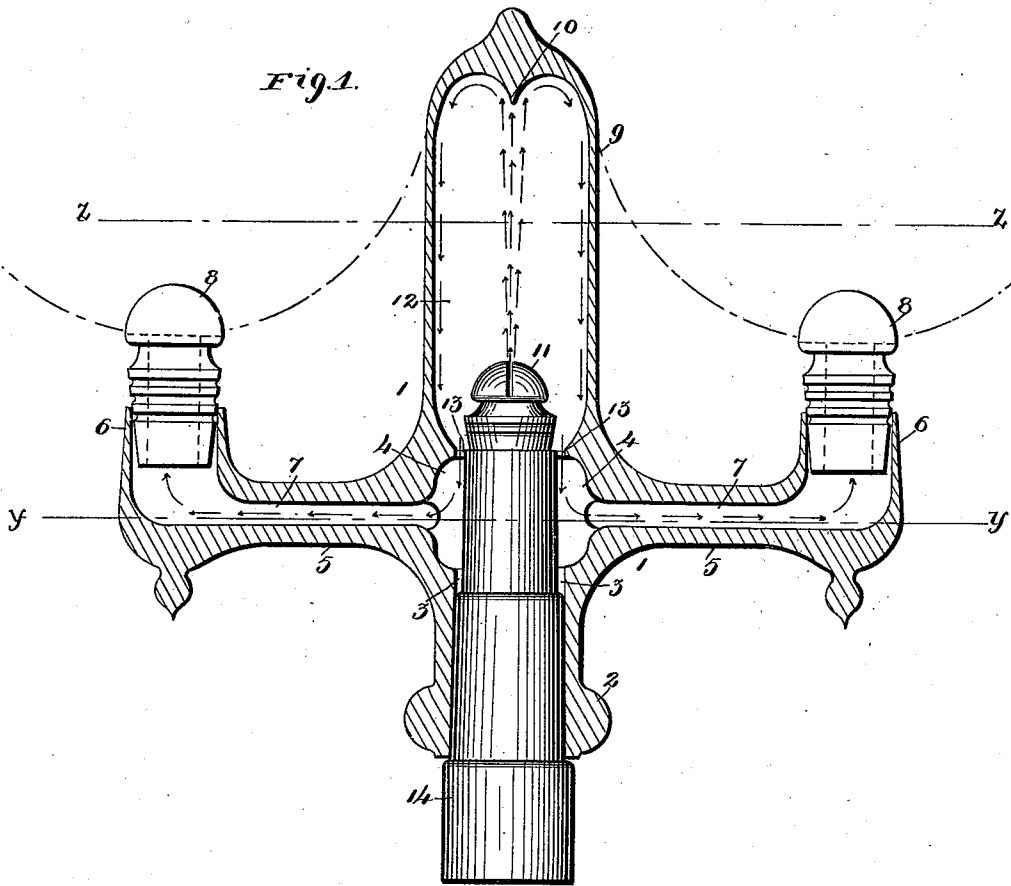


(No Model.)

C. KNAPP.
GAS BURNER.

No. 548,069.

Patented Oct. 15, 1895.



Witnesses
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UNITED STATES PATENT OFFICE.

CHARLES KNAPP, OF ST. LOUIS, MISSOURI.

GAS-BURNER.

SPECIFICATION forming part of Letters Patent No. 548,069, dated October 15, 1895.

Application filed May 25, 1895. Serial No. 550,678. (No model.)

To all whom it may concern:

Be it known that I, CHARLES KNAPP, 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; and it consists in the novel arrangement and combination of parts more fully set forth in the specification, and pointed out in the claims.

In the drawings, Figure 1 is a middle vertical section on line *xx* of Fig. 3. Fig. 2 is a horizontal section on the line *yy* of Fig. 1, and Fig. 3 is a section on line *zz* of Fig. 1.

One of the objects of my invention is to construct a gas-burner which can be placed over the ordinary shell and tip usually secured to the gas-fixture without the employment of screw-threads, whereby the burner can be readily removed and replaced.

Another and very important feature of my invention is a superheating-dome which is heated by the illuminating-flame of the gas, and wherein the gas is expanded before it is consumed at the burner-tip. By this means I produce a soft flame and one that has a maximum amount of illuminating-power for the quantity of gas consumed. Generally the burner consists of a base having a conical bore which is adapted to receive the ordinary shell and tip, of a dome having a closed top into which the gas first issues and within which it is superheated, of an annular chamber below the same, of a contracted annular passage connecting the interior of the dome with the chamber, of arms forming a part of the burner and having upwardly-turned ends for receiving ordinary gas-tips of large capacity, of passages formed in said arms and in communication with the tips and chamber, of an upper deflecting-wall for the dome for properly directing the gas and causing the same to follow the heated wall of the dome, of an ordinary shell carrying a tip of small capacity communicating with the interior of the burner, and of other details to be hereinafter described.

Referring to the drawings, 1 represents the burner and 2 the base of the same. Formed

in said base and extending a suitable distance above the lower edge thereof is a tapering bore 3, and immediately above the same and in communication therewith is an annular enlarged chamber 4, into which the gas passes before it issues to the burner-tips.

5 represents two arms, which in the present instance project in opposite directions, and each of which is provided with upwardly-turned ends 6, and formed in said arms and ends are passages 7, one end of which is in communication with the enlarged chamber 4.

In carrying out my invention I employ what are commonly known as "twelve-foot" tips 8, the same being inserted into the upwardly-turned ends of the arms, and from these tips the gas is burned, the flame impinging against the dome 9. The dome 9 is provided with a closed top and extends a suitable distance above the arms 7 and midway between the tips 8. An inwardly-concave nipple 10 is formed in the inner upper end of the dome 9 for deflecting the gas issuing from the gas-supply tip 11, the gas being in this way compelled to follow the heated walls of the dome, as shown by the arrows in Fig. 1. The nipple being enlarged, retains a certain amount of heat and thus insures the thorough heating of the entire dome. The inner chamber 12 of the dome is contracted at the basal portion, forming a narrow contracted passage 13 about the upper end of the shell 14 when inserted into the burner, as shown in Fig. 1. By this construction the gas is forced to follow the path indicated by the arrows—that is, it fills the chamber 12 first and then escapes, by way of the contracted passage 13, into the annular enlarged chamber 4, whence it passes into the passages 7 of the arms and finally to the tips 8. In practice a two-foot tip 11 is used which supplies the necessary amount of gas.

Of course any number of arms 5 may radiate about the burner, although only two are shown in the present instance.

Having described my invention, what I claim is—

1. A gas burner consisting of a suitable open base and a dome having a closed top, said base adapted to fit over a gas-tip shell and tip carried thereby and form an annular passage at the basal portion of the dome and

around the outer surface of the shell, and suitable arms, having passages, extending outwardly from a point between said base and the basal portion of the dome, substantially as set forth.

2. A gas burner comprising a base, an opening in said base, a dome having a closed deflecting top mounted above said opening and in communication therewith, an ordinary
10 shell inserted into said opening, a gas supply tip carried by the upper end of the shell and projecting into said dome, arms located above the base and below the supply tip, passages formed in said arms, and tips carried
15 by said arms from which the flame issues and impinges upon said dome, substantially as set forth.

3. A gas burner comprising a base, an open-

ing in said base, an annular enlarged chamber above said opening, a hollow dome, a contracted annular passage at the base of said dome and communicating with the annular chamber, arms carrying suitable tips, passages in said arms in communication with the tips and chamber, a shell passed into the
20 opening of the base and extending into the contracted passage, and a supply tip carried by said shell and projecting into the dome, substantially as set forth.

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

CHARLES KNAPP.

Witnesses:

ALFRED A. MATHEY,
JNO. BECKER, Jr.