

E. G. VAN ZANDT.
GAS BURNER.
APPLICATION FILED JULY 11, 1910.

1,045,467.

Patented Nov. 26, 1912.

Fig. 1.

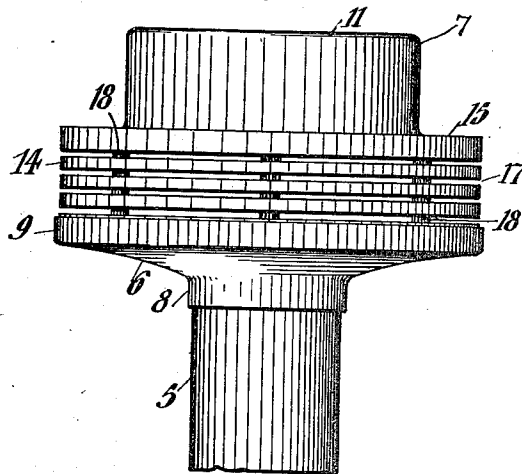
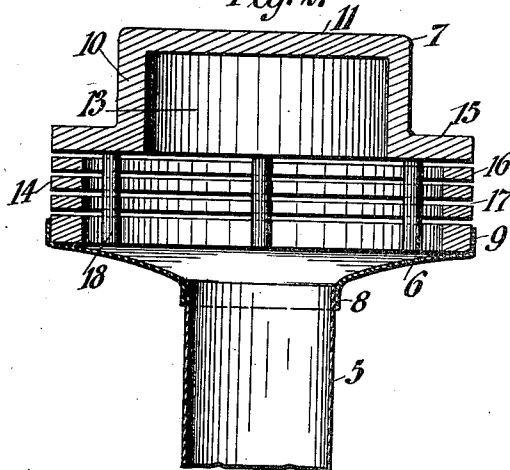


Fig. 2.



Witnesses:
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UNITED STATES PATENT OFFICE.

EDWIN G. VAN ZANDT, OF ST. LOUIS, MISSOURI, ASSIGNOR TO VAN ZANDT GAS APPLIANCE COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION OF MISSOURI.

GAS-BURNER.

1,045,467.

Specification of Letters Patent.

Patented Nov. 26, 1912.

Application filed July 11, 1910. Serial No. 571,349.

To all whom it may concern:

Be it known that I, EDWIN G. VAN ZANDT, a citizen of the United States of America, residing in the city of St. Louis and State of Missouri, have invented certain new and useful Improvements in Gas-Burners, of which the following is a specification.

This invention relates to gas-burners, and more particularly to those of the Bunsen type, and has for its object to produce a burner which will bring about as complete a combustion of gas as possible.

The invention consists in providing a burner formed with a chamber for the temporary gathering of gases intimately mixed with air in certain definite proportions as in the Bunsen burner, and causing their dissemination outwardly of the burner in as diffused a condition as possible, and consists more particularly in providing a chamber having a reduced upper part free from openings and in which the gas and air mixture is retained for a time, and a lower part provided with narrow openings for the egress of the gas mixture.

In the accompanying drawing, Figure 1 is a side-elevation of the improved burner, and Fig. 2 shows a vertical section of the same.

Referring to the drawing, the pipe 5 is connected with a suitable supply of gas and with a mixer whereby the gas is intimately mixed with the proper supply of air. The burner itself consists of two parts or members, a lower member 6 and an upper member 7. The lower member, which is preferably made of pressed steel, is of flaring shape and has a flanged rim 8 at its lower part adapted to surround the pipe 5, and a flanged rim 9 at its upper part adapted to surround the lower edge of the upper member 7. The member 6 fits snugly around the member 7 and is so tightly clamped thereon that no air may pass between the members. The upper member 7 is of an inverted cup-shape and may be made of a single one-piece casting. The upper member comprises an upper cylindrical portion 10 having a flat closed top 11 forming an upper dome-shaped chamber 13 coaxial with the lower portion 14. The upper portion is entirely free from openings and acts as a reservoir. The portion 10 has a flange 15 extending outwardly from its lower part. The lower portion 14 consists of a plurality of annular ribs 16 separated from each other by annular open-

ings 17 of definite width and distance apart, being so arranged as to form contiguously placed annular openings, while vertical struts 18 bind the flange 15 and said ribs together. The ribs 16 and openings 17 may be conveniently formed by subjecting the lower portion to a peripheral cutting so as to provide a plurality of slots corresponding to the openings 17, the remaining material of the wall of said portion forming the ribs 16 and the struts 18.

The gas mixture passing up the center of the pipe 5 in a fine stream strikes the plate 11 where it is spread and intimately mixed and stored for a period in the dome-shaped chamber 13. It is here subjected to a pre-heating and then passes slowly downwardly and outwardly through the openings 17.

It has been found by experience that a burner constructed with the chamber 13 can be kept burning continuously for a long time, and on a very small quantity of gas, without getting red hot, and also that back flashing is obviated.

My invention therefore consists of a gas-burner having an inverted cup-shaped member with a dome-shaped extension free from openings above the outlet openings for the gas.

It is understood that I do not limit myself to the specific details herein described necessary for showing an embodiment of my invention, since changes may be made therein within the scope of the claims without departing from the spirit of the invention.

I claim as new:

1. In a gas-burner, an inverted cup-shaped member having an upper portion free from openings, and having a laterally extending flange integral therewith, and a lower portion of substantially equal depth as the upper portion and provided with openings, said openings being parallel with each other, and the said integral flange forming part of the wall of one of the openings at the junction of said upper and lower portions.

2. In a gas-burner, an inverted cup-shaped member having an upper portion free from openings, and a lower portion of substantially equal depth as and of greater exterior diameter than the upper portion and provided with openings.

3. In a gas-burner, an inverted cup-shaped member having an imperforate

upper portion, a lower portion of greater exterior diameter than the upper portion and provided with openings, and an imperforate intermediate portion joined at its entire inner edge to the upper portion and at its outer edge to the lower portion, the depth of the upper portion being as great as that of the lower portion.

4. A gas-burner consisting of, an inverted cup-shaped upper member, and a lower member, said upper member comprising an imperforate upper portion, and a lower portion of less depth and greater diameter than the upper portion and provided with a plurality of horizontally disposed annular openings, said lower member having an upper flaring portion joined at its outer edge to the lower edge of the lower portion.

5. A gas-burner consisting of, a one piece inverted cup-shaped upper member and a one piece lower member, said upper member comprising, an imperforate top-wall, an imperforate cylindrical upper portion joined at its entire upper edge to the top wall, an imperforate substantially horizontal intermediate portion joined at its entire inner edge to the lower edge of the upper portion, and a cylindrical lower portion of greater diameter than the upper portion and joined at its upper edge to the horizontal portion and provided with horizontally disposed annular openings, said lower member comprising an upwardly and outwardly flaring portion joined at its edge to the lower edge of said lower portion.

6. A gas-burner consisting of, a one-piece

inverted cup-shaped upper member, and a lower member joined thereto, said upper member comprising an imperforate flat top-wall, an imperforate cylindrical upper portion joined at its entire upper edge to said top-wall, an imperforate horizontal annular intermediate portion joined at its entire inner edge to the lower edge of the cylindrical upper portion, and a cylindrical lower portion of greater diameter than the upper portion and joined at its upper edge to the outer edge of said horizontal portion, and provided with horizontally disposed, spaced annular openings, said lower member comprising an upwardly flaring portion having a flange embracing the lower edge of said lower portion.

7. A gas-burner comprising a one-piece inverted cup-shaped member consisting of an imperforate flat top-wall, an imperforate cylindrical upper portion, a horizontal annular intermediate portion, and a cylindrical lower portion of greater diameter than the upper portion and having horizontally disposed annular openings and internal vertical ribs; and an upwardly flaring member having its upper edge joined to the lower edge of said lower portion.

In testimony, that I claim the foregoing as my invention, I have signed my name in presence of two subscribing witnesses.

EDWIN G. VAN ZANDT.

Witnesses:

LOUIS BLUM,
LENA WIDRIG.