

E. G. VAN ZANDT.

GAS BURNER.

APPLICATION FILED NOV. 8, 1909. RENEWED JULY 5, 1912.

1,045,471.

Patented Nov. 26, 1912.

Fig. 1.

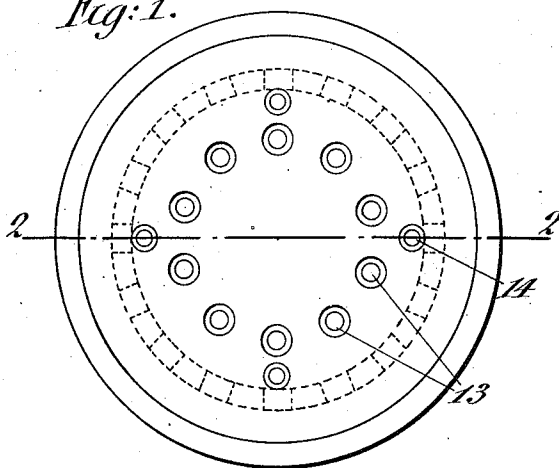
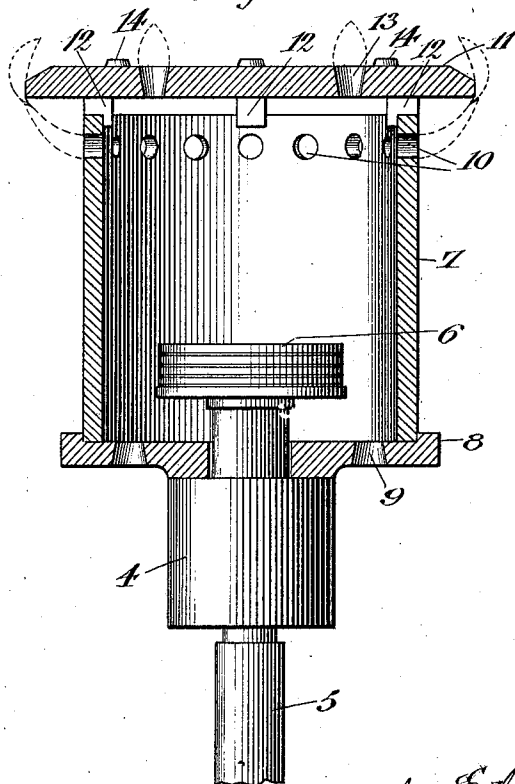


Fig. 2.



Witnesses:

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Inventor
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By his Attorney,
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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.

1,045,471.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, EDWIN G. VAN ZANDT, a citizen of the United States, and resident of 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 such as shown in the United States Letters Patent No. 838,596, granted to me December 18, 1906, and Letters Patent No. 876,507, granted to me January 14, 1908; and this invention relates more particularly to an improved burner, and its object is to provide a vertically arranged burner in which most of the products of combustion of an initial burner are consumed, and in which the second burner feature is utilized.

In the accompanying drawing, Figure 1 is a plan-view of one embodiment of my invention, and Fig. 2 is a vertical transverse section taken on line 2-2 of Fig. 1.

Similar reference characters indicate corresponding parts.

Referring to the drawing, the pipe 5 is connected with a reservoir containing gas or similar fuel and having at its end an initial burner 6 of approved form and preferably of the Bunsen type, having the usual air and gas mixer 4. Surrounding the burner 6 is a shell or container 7, cylindrical in shape as shown in the drawing, having a bottom 8 provided with a plurality of air-openings 9. The main body of the container 7 is provided with a plurality of openings 10 at a short distance from the top of the container and equally spaced from each other, the openings 10 acting to bring about a horizontal draft. Superimposed on the open end of the cylindrically-shaped container 7 is a top-plate 11 spaced apart from the top of the container 7 by struts or members 12, so arranged as to provide an opening between the top of the container 7 and the bottom of the top-plate 11. The top-plate 11 is further provided with a plurality of openings 13 spaced an equal distance apart in the embodiment shown in the drawing, of V-shape, though the walls thereof may also be parallel, the object of which openings is to permit the outflow of combustible gases resulting from the initial burning and now unignited from the interior of the container

and cause their ignition at the exterior or top of top-plate 11. The openings 13 are preferably V-shaped in the vertical section so as to aid in the outflow of gas and also in the ignition of the same. The top-plate 11 is further provided with projections 14 preferably spaced equally distant apart, the object of which is to provide supports for any culinary vessels which might be placed on the burner. The top-plate 11 in the embodiment shown in the drawings extends a certain distance beyond the container 7, and the object of this is to cause a deflection and spreading of the flame emanating from the openings 10 and also to permit a further supply of air passing from the interior of the container 7 and between the top of the container and the bottom of the top-plate, to come in contact with the flames emanating from the openings 10 of the container 7. The stream of hot products of combustion will have their combustible portions ignited and form an additional flame.

The invention, therefore, consists in the arrangement of an upright cylindrical container surrounding an initial burner and having a top-plate arranged in close proximity to the shell to prevent the flames from the initial burner from extending over and beyond the shell and cause the products of combustion to burn at the immediate exterior of the shell between the shell and plate, the initial burner having its flame near the lower part of the shell and the shell having lateral perforations therein. And also in providing a top-plate with openings which are restricted to prevent the flame from the initial burner from passing there-through, and also to burn at the immediate exterior of the plate the products of combustion passing through the openings. And further in providing the plate with an extension so as to protect the shell. And further in providing lugs between the top-plate of the shell and the shell.

The flames emanating from the openings at the top of the shell or container and burning off of and around the edges of the vents in the top of the shell or container are thin and almost transparent and of very little heat inasmuch as the hand can be placed in the flame for some time without injury.

I have shown one embodiment of my invention, but I do not wish to limit myself to

the details of the same, since changes may be made therein without departing from the spirit of my invention.

I claim as new:

- 5 1. In a gas-burner having an initial burner, a shell or container surrounding the initial burner and provided with air-openings at the bottom and openings near the top, and a plate with openings over the top of the shell or container some distance over the top of the shell or container.
- 10 2. In a gas-burner having an initial burner, a cylindrical shell surrounding the initial burner and having openings near the upper end of the shell and having a bottom-opening, and a top-plate provided with openings, the top-plate being spaced some distance above the upper end of the cylindrical shell and provided with a portion
- 15 extending beyond the shell.
- 20 3. In a gas-burner, the combination of a shell having an open upper end and a plurality of perforations near the upper edge thereof, a top-plate spaced above said end and edge and extending beyond said edge, and an initial burner adapted to discharge its products of combustion into said shell.
- 25 4. In a gas-burner, the combination of an upright cylindrical shell having an open upper end and lateral openings near the upper end, a top-plate spaced above the open upper end of the shell, and extending beyond the shell, a plurality of lugs interposed between the top of the shell and the top-plate, and
- 30 an initial burner within said shell and adapted to discharge its products of combustion directly into the shell.
- 35 5. In a gas-burner, the combination of an upright cylindrical shell having an open upper end and lateral openings near the upper end and openings in the lower end there-
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of, a top-plate spaced above the open upper end of the shell and extending beyond the widest part of the shell, a plurality of lugs interposed between the top of the shell and the top-plate, and an initial burner within said shell at the lower part thereof and adapted to discharge its products of combustion directly into the shell. 45

6. In a gas-burner, an initial burner, an upright cylindrical shell having lateral perforations therein, and a plate disposed above said shell arranged in close proximity to the shell to prevent the flames from the initial burner from extending out and beyond the shell, and to cause the products of combustion to burn at the exterior of the shell between the shell and plate, said initial burner having its flame near the lower part of the shell. 50 55 60

7. In a gas-burner having an initial burner, an upright cylindrical shell surrounding the initial burner and provided with openings, and a plate with openings over the top of the shell or container arranged in close proximity to the shell to prevent the flames from the initial burner from extending out and beyond the shell and provided with restricted openings to prevent the flames of the initial burner from passing through the openings of the plate and also to cause the products of combustion passing through the openings to burn at the immediate exterior of the shell at the opening. 65 70 75

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:

FANNIE FISK,
C. P. GOEPEL.