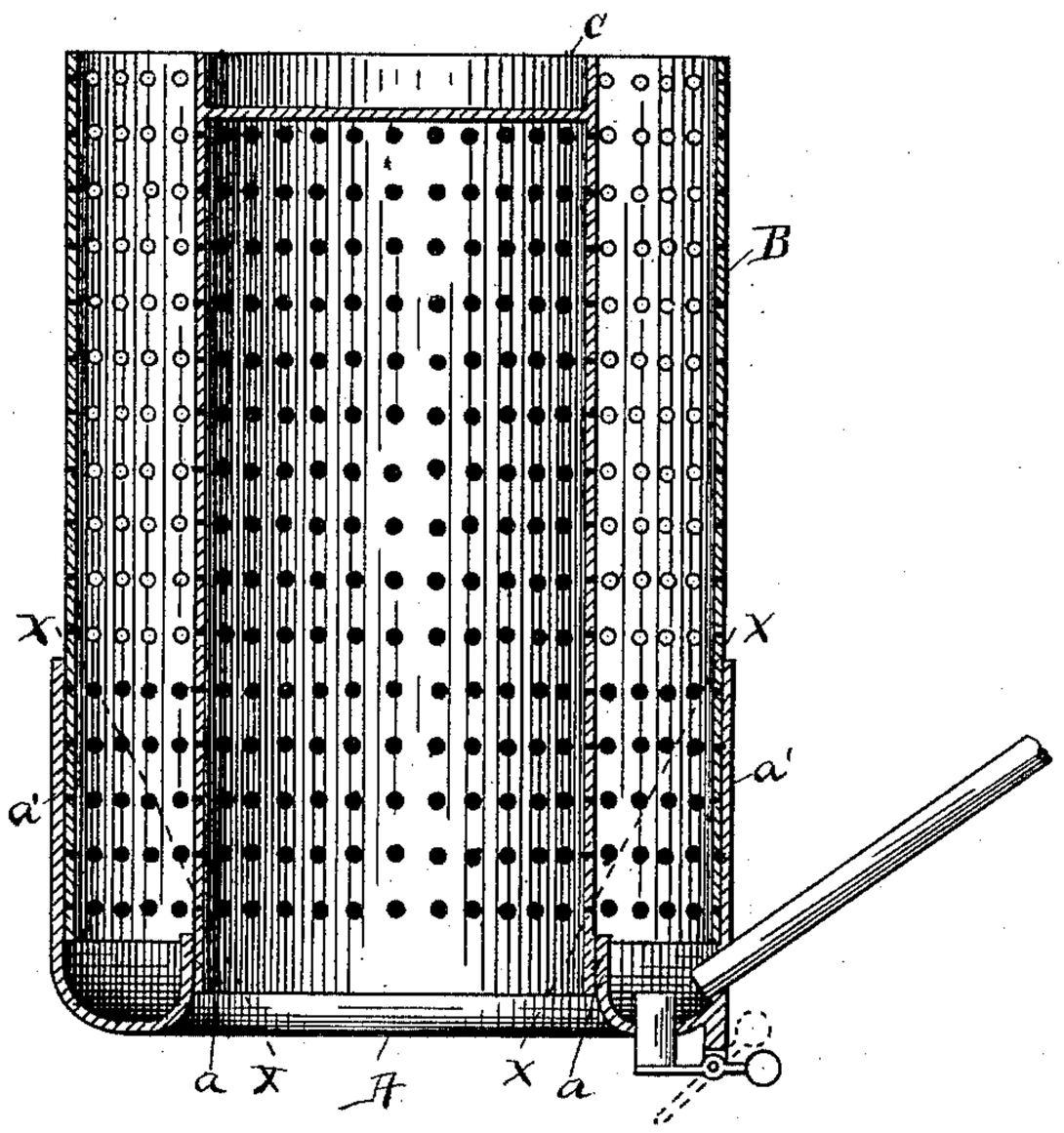
(No Model.)

W. R. JEAVONS.

VAPOR BURNER.

No. 467,466. Patented Jan. 19, 1892.



Attest
R. B. Moser.
A. J. Symes Jr.

Inventor:
William R. Jeavons

By H. T. Fisher
Attorney.

UNITED STATES PATENT OFFICE.

WILLIAM R. JEAVONS, OF CLEVELAND, OHIO, ASSIGNOR OF ONE-HALF TO JOHN A. LANNERT, OF SAME PLACE.

VAPOR-BURNER.

SPECIFICATION forming part of Letters Patent No. 467,466, dated January 19, 1892.

Application filed November 4, 1891. Serial No. 410,826. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM R. JEAVONS, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Vapor-Burners; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to vapor-burners of the class illustrated and claimed in United States Patent to William R. Jeavons, No. 438,548, dated October 14, 1890, and is an improvement thereon.

The invention consists in the construction, combination, and arrangement of parts, substantially as shown and described, whereby the burner is brought to a vaporizing condition much more quickly than by the old form of burner, and the construction of the burner is materially simplified and cheapened.

In the original patent referred to the vapor diffusing or distributing chamber was wholly outside of the combustion-tubes, and the vapor fed therefrom into the space between the tubes. In the present invention the outside chamber is dispensed with and the burner-bowl between the combustion-tubes is utilized as a diffusing or distributing portion or space for the vapor.

In the accompanying drawing, the single figure shown is a vertical central section of our improved form of burner.

A is the burner-bowl, made preferably of sheet metal, so as to be thin and easily heated, and thus facilitate vaporization of the oil, especially when the burner is started. The said bowl, as shown in this instance, has its inner edge or wall *a* brought up to about the usual height as compared with the bottom of the bowl, while the outer edge or wall *a'* rises some distance above the plane of the inner edge, say three times as high, or in that neighborhood, the elevation in any case being such as to form a wall for the bowl in which the vapor will be protected in its travel around in the hollow of the bowl and not be disturbed by air and consequent combustion. The theory on which this and like burners acts is that the vapor is heavier than air and will distribute itself evenly around in the trough of the burner if it be not consumed before this can occur, and experience has shown that the danger-line of consumption begins with the lateral air-openings; but these openings or perforations in the combustion-tubes are small, and each one admits only a very small volume of air. Hence with a burner constructed substantially as shown herein, having one side of the bowl higher than the other, and it may be either side, the space in which combustion cannot and does not occur is practically the space beneath dotted line *x x*, on a line approximating thereto, possibly with a convex curvature. At any rate, observation shows that only small blue flames occur at each perforation on the open side of the burner and that these flames extend inward only a short distance from the surface of the inner tube B for some distance from its bottom, while the same operation is observed on the opposite side where the perforations begin above the extension *a'*; but an upward draft is thus created by the said tubes and a volume of vapor is drawn up somewhat centrally between the opposed air-inlets and is consumed higher up in the combustion-chamber. This, however, only helps to demonstrate the theory that by this construction a vapor-diffusing chamber or channel is formed in the bottom of the combustion-chamber between the walls of the burner-bowl and extending to the first series of perforations on the protected side of the chamber.

The foregoing construction not only affords a good working diffusion-chamber, but by extending one side of the bowl upward some distance, as shown, or by an equivalent construction, a shield or guard is formed against air-currents which might disturb the flow and distribution of the vapor. The perforated tubes B and C in the arrangement of said tubes as here shown practically form an extension of the walls *a a'*, so that I have a combined diffusion-channel and combustion-chamber whose walls are imperforate part way and unevenly perforated at the bottom.

Having thus described my invention, what I

claim as new, and desire to secure by Letters Patent, is—

A vapor-burner bowl constructed with closed walls upon its sides, one of which is higher than the other in respect to the bottom of the bowl and the two walls forming a vapor-diffusing channel between them, and perforated tubes forming the combustion-chamber of the burner, substantially as described.

Witness my hand to the foregoing specification.

WILLIAM R. JEAVONS.

Witnesses:
H. T. FISHER,
NELLIE L. MCLANE.