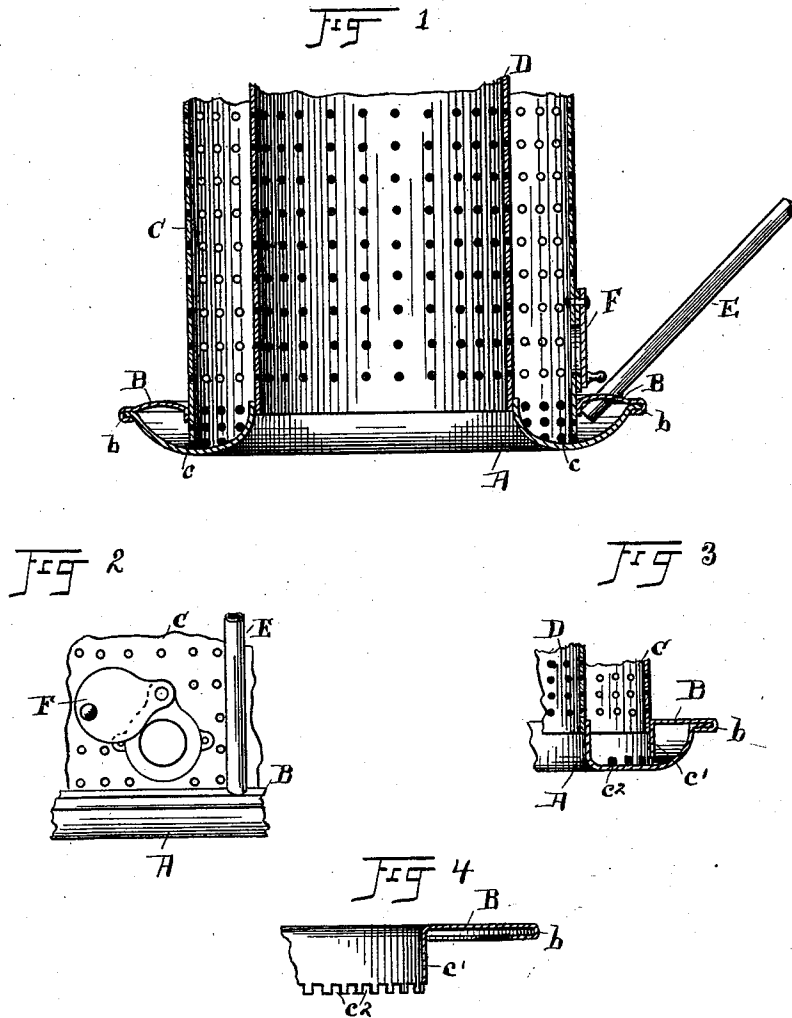


(No Model.)

J. A. LANNERT & W. R. JEAUVONS.
HYDROCARBON BURNER.

No. 466,498.

Patented Jan. 5, 1892.



Attest.
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UNITED STATES PATENT OFFICE.

JOHN A. LANNERT AND WILLIAM R. JEAVONS, OF CLEVELAND, OHIO.

HYDROCARBON-BURNER.

SPECIFICATION forming part of Letters Patent No. 466,498, dated January 5, 1892.

Application filed October 31, 1891. Serial No. 410,421. (No model.)

To all whom it may concern:

Be it known that we, JOHN A. LANNERT and WILLIAM R. JEAVONS, citizens of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Hydrocarbon-Burners; and we 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 the class of hydrocarbon-burners shown in United States Patent No. 438,548, issued to William R. Jeavons, and is an improvement thereon.

The invention consists in an arrangement of parts, first, to the end that the vapor can be distributed throughout a greater length of channel than heretofore, thus extending the scope of the burner; second, to more effectually protect the vapor from air-drafts or currents and to lighten and cheapen the construction of the burner; all substantially as shown and described, and particularly pointed out in the claim.

In the accompanying drawings, Figure 1 is a vertical central section of our improved burner. Fig. 2 is a side elevation of a section of the burner about the oil-inlet and the opening for applying a light to start the burner. Fig. 3 is a cross-section of a modified form of burner-bowl. Fig. 4 is a cross-section of the cover shown in Fig. 3.

A is the vapor-bowl or bowl of the burner, and B is the cover for the diffusing-chamber, shaped in either of the forms shown herein or the equivalent of said forms. Both these parts in this instance are made of sheet metal, which enables us to make a lighter and cheaper burner than is possible with cast metal.

C is the outer perforated combustion-tube, and D is the inner combustion-tube, and a combustion-chamber is formed between these tubes after the manner of the patent above referred to.

In Fig. 1 the cover B is shown as having an overlapping lip *b* closely engaging the rim of the burner-bowl all around the same and extending inward about half-way across the bowl proper, and the burner-tube C rests

closely against the inner edge of the cover and extends down onto the bottom of the bowl, thus closing the vapor diffusing or distributing chamber beneath the cover B except as the same is open through the perforations *c* in the said tube C. The tube C need not extend entirely down upon the bottom of the burner-bowl, as shown; but this is the preferred way, as the perforations *c* are numerous and large enough to provide all the necessary escape for the vapor. This of course forms a perforated partition-wall at the front of the diffusion-chamber and in this sense differs from the patent referred to, in which no wall appears and the front of the said chamber is practically open. As is well known, the vapor of hydrocarbon is heavier than air and acts like water, yet it is not so dense but that it is influenced by air drafts or currents. The perforated partition or wall prevents the air from interfering with the gravitating travel or distribution of the vapor as well as the too free flow of the vapor at any one point and insures a better distribution thereof than with the old construction. This insures an equal or uniform flow all around the burner, though the size of the burner be materially increased; but it will be understood that notwithstanding this partial inclosure of the vapor-chamber the vapor is not under pressure therein and escapes naturally by its own gravity, promoted possibly by the draft of the flame.

In Figs. 3 and 4 we show a modification of the cover B, in which the said cover has a downwardly-extending flange *c'* around its inner portion, the said flange having depth enough to rest on the bottom of the bowl and provided with notches or openings *c''* at or near its lower edge for the escape of vapor. If preferred, this flange may be perforated like the tube C, or it may be differently formed to allow the vapor to escape and at the same time form a suitable inclosing partition or wall for the purpose above described in connection with tube C. Other modifications in the same line might be suggested; but what is here shown is thought to be sufficient to disclose the nature and scope of the invention.

In starting the burner the gasoline or oil is

admitted to the bowl through pipe E. The burner being cold, some of the gasoline or oil will find its way into the outer portion of the bowl or the portion between the two tubes, 5 where it is readily ignited through the opening in tube C having the gravitating cover F. By this arrangement none of the parts of the burner need to be moved or detached to effect the starting of the burner, and the burner-bowl being of thin metal it is more quickly 10 brought to a vaporizing state than with a heavy construction of bowl. This is esteemed a material advantage in the practical everyday use of the burner. After the burner has 15 been started the vaporizing all occurs within the vapor-chamber proper and at or near the inlet-pipe and the vapor gravitates around within the chamber, as before described.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is— 20

In a vapor-burner, a burner-bowl provided with a vapor-diffusing chamber and an open space forming the bottom of the combustion-chamber, a perforated wall separating said 25 chamber and open space, and perforated tubes forming the combustion-chamber, substantially as described.

Witness our hands to the foregoing specification this 29th day of October, 1891.

JOHN A. LANNERT.
WILLIAM R. JEAVONS.

Witnesses:

H. T. FISHER,
NELLIE L. McLANE.