No. 848,829. PATENTED APR. 2, 1907.

W. R. JEAVONS.

OIL BURNER.

APPLICATION FILED MAR. 6, 1906.

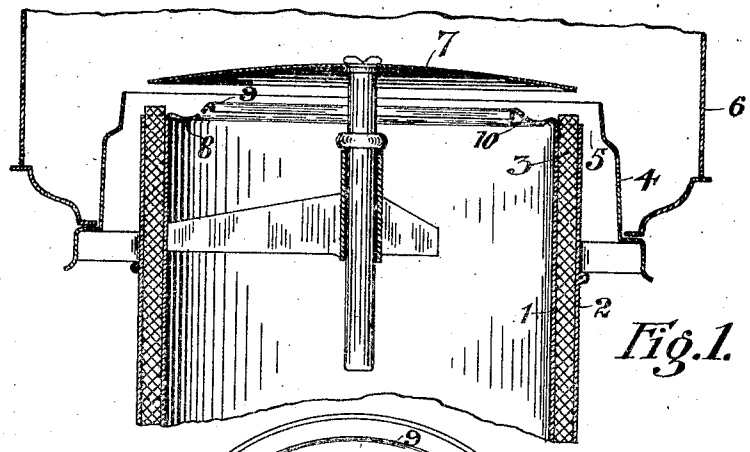

Fig. 1.

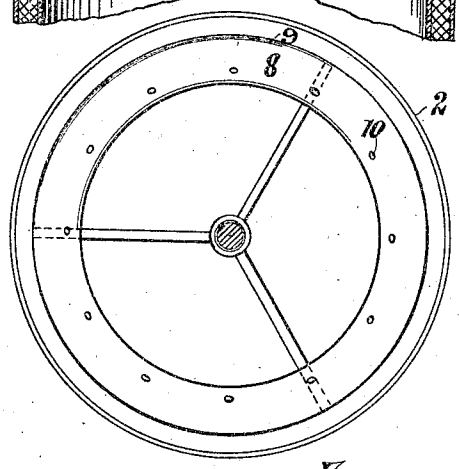

Fig. 2.

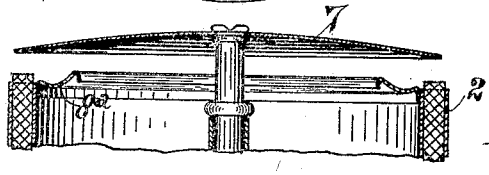

Fig. 3.

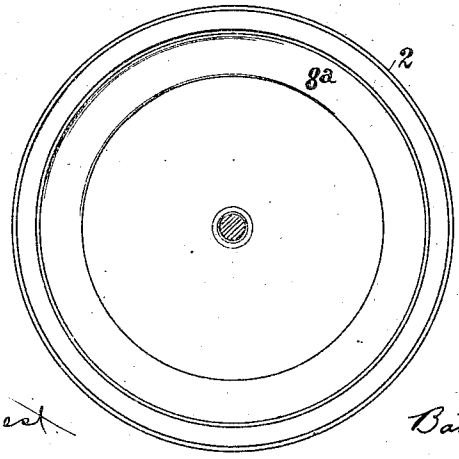

Fig. 4.

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UNITED STATES PATENT OFFICE.

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OIL-BURNER.

No. 848,829. Specification of Letters Patent. Patented April 2, 1907.

Application filed March 6, 1906. Serial No. 304,468.

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 a certain new and useful Improvement in Oil-Burners, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

My invention relates to oil-burners of the class wherein a blue flame is produced, as illustrated by the patent to J. Aitchison, No. 510,149, patented December 5, 1893, and is an improvement in the details of a construction for which I have already applied for Letters Patent.

The object of the invention is to better protect the primary flame of the wick from undesirable air-currents and prevent all possibility of vapor condensation on the inside surfaces of the inner wick-tube.

Referring to the drawings, Figure 1 represents a vertical section taken through a burner with the lower portion of the wick-tubes and the upper part of the combustion-chamber broken away, the details of the features thus omitted being well known in the art. Fig. 2 represents a plan view of the wick-tubes and air-guard shown in Fig. 1. Fig. 3 represents a vertical section showing a modification of the air-guard illustrated in the preceding views. Fig. 4 is a plan view of the wick-tubes and air-guard shown in Fig. 3.

In the drawings, 1 is the inner wick-tube, and 2 is the outer wick-tube. Between these tubes is a wick 3, which is raised or lowered by any suitable means.

4 is a collar which surrounds the outer wick-tube, being of a slightly larger diameter than the said wick-tube to leave a narrow air-passage 5 between its upper end and the wick-tube. The top of this collar is in a plane slightly above the wick-tube, as shown, and the air-passage 5 mentioned is considerably narrower than the air-passage provided in lamp devices which burn with a yellow flame.

6 is a chimney, the bottom of which rests on the collar and extends up to a suitable height.

7 is an air-deflecting plate or spreader approximately the diameter of the wick and supported in a position slightly above the wick, as shown, and a little higher than the top edge of the collar 4. At the top of the inner wick-tube is a member 8, which extends inwardly and the inner edge 9 of which extends upwardly to a plane slightly above the top edge of the wick-tubes and forms a barrier to prevent the swiftly-moving air-current which flows through the interior of the burner from impinging on the base of the wick. This member 8 is shown as a flange joined firmly to the inner wick-tube, as shown in Figs. 3 and 4, or may be made integral therewith, as shown in Figs. 1 and 2.

In this class of burners if the base of the wick is not protected from the swiftly-moving air-current the effect will be that no combustion can occur at the base of the wick where it emerges from the wick-tube and the burner will not give a proper flame. In the operation of this device there is a drift of vapor inwardly over the projecting member or flange 8, and by making this member or flange integral or firmly fixed to the top of the inner wick-tube there is no possibility of such vapor drifting downwardly and condensing on the inside of the wick-tube. In the first lighting of the wick in these devices it is desirable that a small measure of air gain access to the inner base of the wick, so that the initial flame at this point will be started readily, and for this purpose I provide a number of small air-openings 10 through the member 8, as shown in Figs. 1 and 2, as by this means the wick can be initially lighted more satisfactorily and with the top of the wick below the plane of the air-barrier. The spreader 7 is supported a little distance above the wick in any suitable manner and leaves a lateral air-passage between itself and the flange 8. The air passing swiftly through this passage outwardly carries the partially-consumed vapors from the wick outwardly through the opening formed by the edge of said spreader and the top edge of the collar 4, producing a blue flame, the barrier 9 preventing such current from striking the lower part of the exposed portion of the wick, and thus protecting it so that a small primary flame is maintained about the inner side of said wick. The flange 8 being integral with or firmly fixed to the inner wick-tube prevents any measure of vapor from the inside of the wick from drifting down onto the inner surface of the tube 1, and so prevents any condensation of oil on the inner tube from such cause.

In Figs. 3 and 4 the flange 8^a is shown as firmly fixed to the inner wick-tube, as by sol-

dering, instead of being integral therewith, as shown in Figs. 1 and 2. In the modification shown in Figs. 3 and 4 the perforations may be omitted from the flange and still preserve the features of preventing condensed vapor from dripping down the inner surface of the wick-tube 1 and of protecting the lower part of the exposed portion of the wick from the rapidly-flowing current of air passing between the deflector and the flange.

I claim—

1. In a burner of the class described, the combination of an inner and an outer wick-tube, and a spreader extending across the tops of said tubes and forming an airway therewith, said inner tube being provided with a flange extending inwardly from the upper end and having a portion toward the interior of the burner on a higher plane than the portion adjacent to the inner wick-tube to form an air-barrier, substantially as specified.

2. In a burner of the class described, the combination of an inner and an outer wick-tube, a spreader extending across the tops of said tubes and forming an airway therewith, and a flange projecting inwardly directly from the top of the inner wick-tube and having a portion toward the interior of the burner on a higher plane than the top of the inner wick-tube, substantially as specified.

3. In a burner of the class described, the combination of an inner and an outer wick-tube, a collar surrounding said tubes with its top edge above the plane of the same, a spreader extending across the tops of said tubes and having its outer edge on a plane above the top edge of the collar, and a flange extending inwardly directly from the upper end of the inner wick-tube and having a portion in a higher plane than the top of the said wick-tube to form an air-barrier, substantially as specified.

4. In a burner of the class described, the combination of an inner and an outer wick-tube, a collar surrounding and spaced from the outer wick-tube with its upper edge in a higher plane than the top of said wick-tube, a spreader extending across the tops of said wick-tubes with its outer edge in a plane above the top edge of the collar, and a flange extending inwardly directly from the upper end of the inner wick-tube and having a portion above the plane of the top of said tube to form an air-barrier, substantially as specified.

5. In a burner of the class described, the combination of an inner and an outer wick-tube, a spreader extending across the tops of said tubes and forming an airway therewith, and a flange integral with the inner wick-tube and projecting inwardly from the top thereof, said flange having a portion toward the interior of the burner on a higher plane than the portion adjacent to the wick-tube to form an air-barrier for protecting the base of the wick.

6. In a burner of the class described, the combination of an inner and an outer wick-tube, a spreader extending across the tops of said tubes and spaced therefrom to form an airway therewith, and a flange projecting inwardly from the upper portion of the inner wick-tube and having a portion thereof in a higher plane than the top of said tube to form an air-barrier, said flange being provided with perforations for admitting air in limited volume therethrough.

7. In a burner of the class described, the combination of an inner and an outer wick-tube, a spreader extending across the tops of said tubes and forming an airway therewith, and a flange projecting inwardly from the upper end of said wick-tube and having a portion toward the interior of the burner on a higher plane than the top of said wick-tube, said flange being provided with perforations below the said portion for admitting air in limited volume therethrough.

8. In a burner of the class described, the combination of an inner and an outer wick-tube, a collar surrounding the outer wick-tube and spaced therefrom and having its upper edge above the upper edge of said wick-tube, a spreader extending across the tops of said tubes with its outer edge above the plane of the upper edge of the collar, and a flange extending inwardly from the upper portion of the inner wick-tube and having a portion on a higher plane than the top of said tube for the purpose of forming an air-barrier, there being perforations in said flange to permit the passage of a limited volume of air therethrough.

9. In a burner of the class described, the combination of an inner and an outer wick-tube, a collar surrounding the outer wick-tube and spaced therefrom, and having its upper edge above the upper edge of said wick-tube, a spreader of less diameter than the said collar and extending across the tops of the wick-tubes and forming an airway therewith, said spreader having its outer edge above the plane of the upper edge of the collar, and a flange extending inwardly from the top of the inner wick-tube and having a portion toward the interior of the inner tube on a higher plane than the portion adjacent to said tube for forming an air-barrier, said flange being provided with perforations below the highest portion or barrier thereof for admitting air in limited volume therethrough, substantially as specified.

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

WILLIAM R. JEAVONS.

Witnesses:
W. L. McGARRELL,
J. B. HULL.