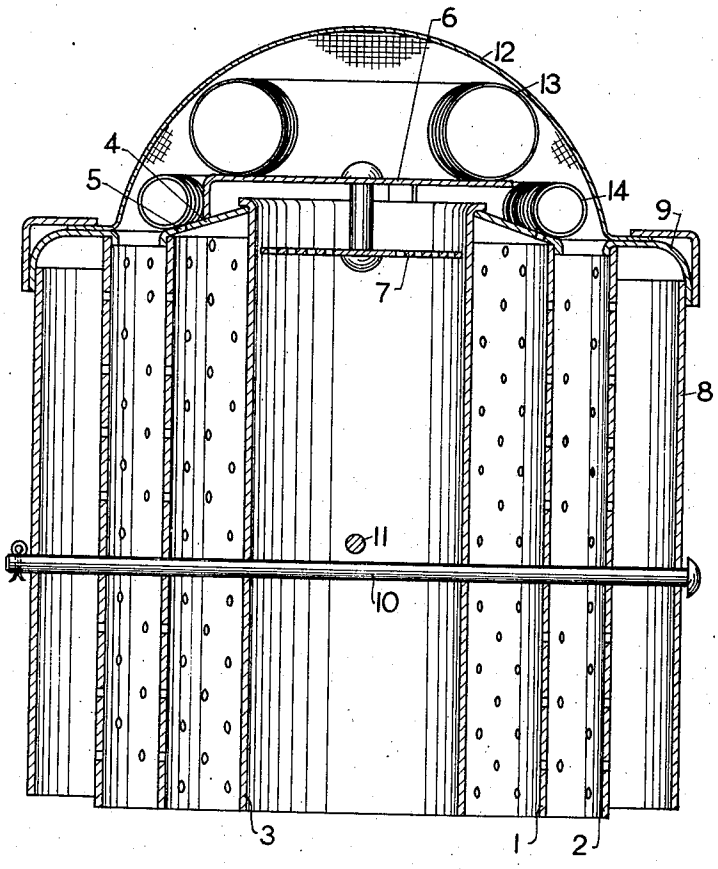
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OIL BURNER

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OIL BURNER

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1 Claim. (Cl. 158—86)

The invention relates to an improved burner of the short drum perforated shell type.

The object of the invention is to provide such a burner with an induced draught which can be directed or distributed at the top of the burner in such a way that substantially complete combustion of the fuel is obtained without the necessity for applying pressure or for using a stack to produce or promote the draught.

A further object is to provide a burner having a flame which is not appreciably impaired or retarded by the use of a radiating member, e. g., a wire gauze by which the flame may be enclosed.

According to the invention the burner is provided with an air passage or air passages through the interior space of the burner and supplied with air at the bottom and surmounted at the top by a spreading plate or like member whereby the air is directed outwardly into the flame above the shells. Means may further be provided to control the said air passage or air passages, or any other air passages through which the air is supplied to the burner.

The accompanying drawing is a sectional elevation of a burner according to the invention.

Referring to the drawing, the burner comprises two coaxial perforated cylindrical shells, an inner shell 1 and an outer shell 2. These perforated shells rest or are mounted in a conventional manner upon a base, not shown in the drawing, having an annular groove filled with absorbent material such as asbestos and fed with liquid fuel from a reservoir.

Within the shells is located a centre cylinder or tube 3 open at the bottom to the air. This centre cylinder 3 extends somewhat above the tops of the shells and the annular space between the cylinder and the inner shell is partly closed by a sloping cover 4, which is perforated or slotted at 5 adjacent to the inner shell. This cover supports a spreader plate 6 above the top of the centre cylinder, whereby the air passing up the centre cylinder is directed outwardly into the flame issuing from the space between the perforated shells. A perforated plate 7 is suspended from the spreader plate 6, so that it lies in the mouth of the centre cylinder and will serve to keep the spreader plate in position.

The outer shell 2, which is open at the top, is enclosed in a cylindrical casing 8, which in the drawing does not extend down to the level of the bottom of the shell, but in some instances may have to extend down to such level to obtain the best results. The annular space between the casing 8 and the outer perforated shell is closed by a cover 9. The casing, shells and centre cylinder may be secured to one another as by transverse rods 10, 11 passing through the burner.

The burner may be covered by a mantle 12 of wire gauze for example, serving as a radiating member, and the space between the top of the burner and the mantle may be partly occupied by coils of wire or other filling material providing heat-radiating surface and serving to increase the turbulence of the burning mixture. In the embodiment shown in the drawing two rings 13, 14 of coiled wire are provided, one of which, 13, rests on top of the spreader plate and the other, 14, lies on the cover between the centre cylinder and the inner shell and adjacent to the perforations 5 in that cover.

In the embodiment described and shown the spreader plate 6 need not extend laterally far beyond the top rim of the centre cylinder 3. It may extend, for example, about half-way or slightly less between the rim of the centre cylinder and the rim of the inner shell. When the burner is applied to a cooker, in which case the radiating mantle and the filling material may be omitted, if desired, the spreader plate may extend laterally considerably further, so that the air from the centre cylinder is directed more outwards to impinge upon and mix with the flame immediately above the shells.

As it is known from experience that the amount of air passing through the central air passage is very important with a view to a satisfactory operation of the burner, means may be provided for regulating the said passage, for example controlling shutters or perforated plates. Such means for controlling the flow of air to the burner may likewise be applied in connection with other passages through which air is supplied.

I claim as my invention:

In an oil burner of the perforated drum type, the combination comprising vertical coaxial perforated tubes, an imperforate cylindrical casing surrounding said perforated tubes, an imperforate central air tube extending above the upper edge of said perforated tubes, a deflection plate greater in diameter than the diameter of said central air tube mounted in spaced relationship opposite the upper end of said central air tube, a sloping annular cover joining the upper edge of the innermost of said perforated tubes to the upper edge of said central air tube, perforations in the outer edge of said annular cover a helix of wire mounted around the upper edge of said deflection plate, a second helix of wire mounted on said annular cover and disposed over the perforations therein and a wire gauze mantle mounted on said imperforate cylindrical casing, arranged and disposed to cover said wire helices.

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