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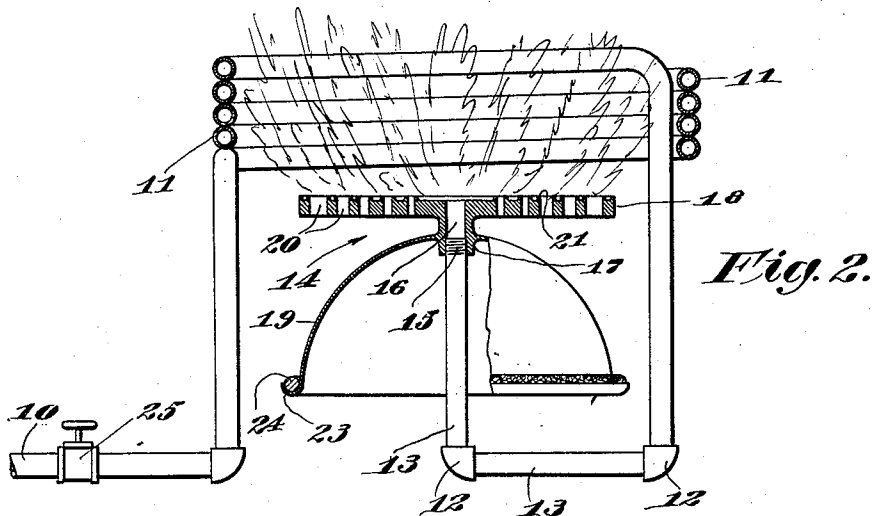
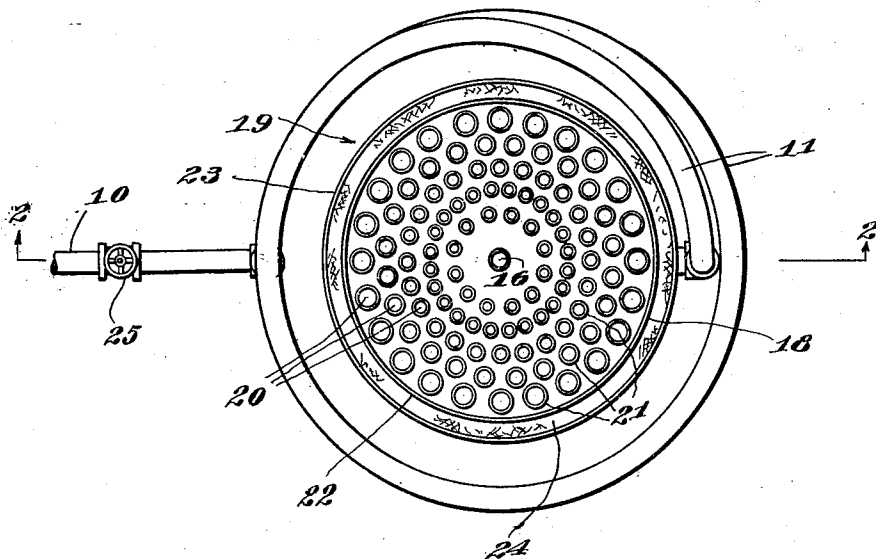
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OIL BURNER

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Fig. 1.



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OIL BURNER

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My present invention relates to oil burners, and particularly to oil burners of a self generating type in which a fuel oil of light specific gravity is utilized.

In many oil burners of this class in use to-day, there is considerable difficulty in obtaining proper combustion due to a large extent to a lack of proper mixture of oxygen and an uneven distribution of oxygen with the oil gas, and also, to a large extent, the proper pre-heating of the oil before the gas is developed.

The principal object therefore, is an improved oil burner for light fuel oils;

Another object, is an improved means of air distribution over the burner proper;

Other objects and novel features concerning the construction and operation of my invention will appear as the description of the device progresses.

In the accompanying drawing illustrating the invention in somewhat diagrammatic form,

Fig. 1 is a plan view, and

Fig. 2 is a partial vertical section taken on the line 2—2 of Fig. 1.

Referring to the drawings, 10 indicates an oil supply pipe line connecting with any suitable oil reservoir which may be either a gravity feed type or a pressure type such as use compressed air or the like. Connecting with pipe line 10, is a preheating coil 11, comprising a series of turns or coils in which the oil is pre-heated while being fed to the burner. Pipe fittings 12 together with short nipples 13, completes the connection of the coil 11 to the burner unit 14 by means of the threaded connection 15 and the tapped orifice 16 located in the hub 17.

The burner unit 14 comprises a perforated plate 18 and a base 19, and for present purposes are shown as one piece, but in actual practice no doubt would be made up of several parts of the same general proportions.

The plate 18 is provided with a series of perforations of varying diameters as indicated at 20, and each perforation is provided with an upstanding rim 21 rising slightly above the mean level of the top of the plate 18. A corresponding rim is provided on the

outer circumference of the plate 18 as indicated at 22. The purpose of these rims 21 is to provide a dike-like barrier around the air ports or perforations 20 such that a film of oil may pass over the plate 18 and around the perforations 20 without falling through to the base 19.

The fuel oil flows up through the orifice 16 located in the center of the plate 18 in pre-heated condition and circulates around the openings 20. At this stage, the oil is rapidly being transformed into a combustible gas due to heat from the plate 18, and at the same time the gas so produced is being properly mixed with air admitted through the ports 20 and readily ignites.

The base 19, is shaped like an inverted bowl and provided with an upturned annular flange of semi-circular shape as illustrated at 23 for the purpose of providing a receptacle for an annular ring of material such as asbestos indicated at 24. The purpose of the asbestos ring 24 is to provide an initial heating torch when starting the burner from a cold condition.

Assuming that the burner is cold and about to be lighted, oil is turned on through the valve 25 in the supply line 10 and allowed to overflow the burner plate 18 through the ports 20 down on to the base 19 from which it runs into the receptacle 23 saturating the asbestos ring 25 which is then ignited and, the flame from this ring 25 envelops the plate 18 bringing it up to a temperature sufficient to generate gas on its surface at which time combustion is completed.

Having thus described my invention, what I claim as new, is:

1. In an oil burner, a burner unit comprising a gas generating plate provided with a series of air ports, said ports further provided with annular rims slightly above the mean level of the upper surface of said plate, an inverted hemispherical base concentrically mounted below said plate and provided with an upturned annular gutter formed on the lower periphery of said base, an annular ring of non-combustible material adapted to fit said gutter.

2. In an oil burner, a burner unit compris-

ing a gas generating plate provided with a series of air ports, said ports further provided with annular rims slightly elevated above the gas generating surface of said plate, an
5 inverted hemispherical base concentrically mounted below said plate and provided with an annular ring of non-combustible material adapted to fit a gutter formed on the lower periphery of said base, a pre-heating coil lo-
10 cated above said plate and providing an oil passage from a supply line to the under side of said base and having an outlet at the upper center of said gas plate generating surface.

3. In combination in an oil burner, a pre-
15 heating oil supply coil connecting with a semi-spherical base provided with an up-turned gutter adjacent its lower periphery, a perforated gas generating plate attached to the top of said base and means provided to re-
20 ceive oil from said coil to said gas generating plate, substantially as shown and described.

In witness whereof, I hereby subscribe my name this 23rd day of May, 1928.

ISRAEL J. GRUNIN.