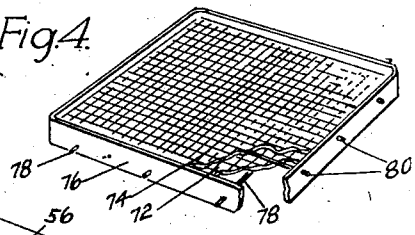
April 20, 1926. 1,582,001

C. GIAMMATTEO

HEATER

Filed Feb. 24, 1925

Fig. 4.



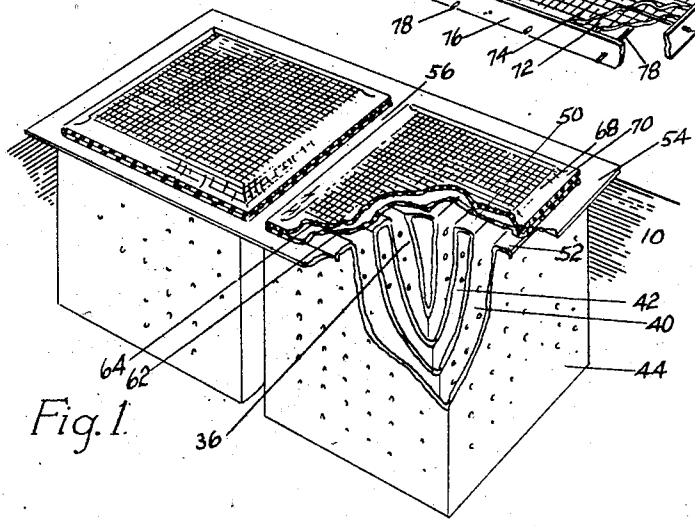


Fig. 1.

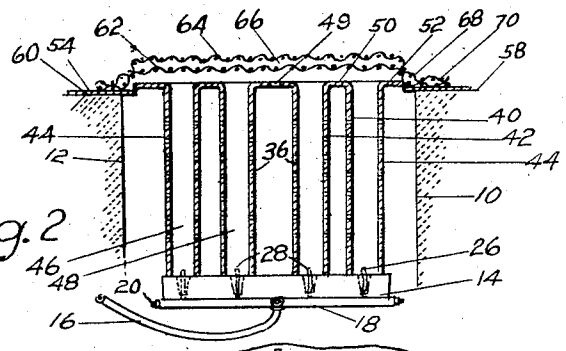


Fig. 2.

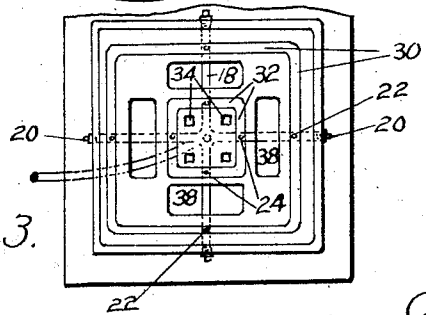


Fig. 3.

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Patented Apr. 20, 1926. 1,582,001

UNITED STATES PATENT OFFICE.

CHARLES GIAMMATTEO, OF BRISTOL, CONNECTICUT,

HEATER.

Application filed February 24, 1925. Serial No. 11,122.

To all whom it may concern:

Be it known that I, CHARLES GIAMMATTEO, a citizen of the United States, residing at Bristol, county of Hartford, State of Connecticut, have invented a certain new and useful Heater, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

This invention relates to heaters and is herein shown as embodied in an oil burner for stoves, ranges and the like.

As is well known, there are a number of devices on the market for converting coal or wood stoves into oil burners, the ordinary fire box of the stove being utilized to receive a burner which is supplied with one of the cheaper grades of oil from a tank. One such burner comprises a plurality of perforated cells arranged one within the other to create intervening wick chambers or fuel passages. These burners are apt to produce a smoky flame, possibly because the air is not admitted in the proper or adequate degree or because the draft is such that globules of fuel are carried through the fire box in too coarse a condition but, whatever the reason, a loss of heat results and there are other obvious disadvantages.

An object of the invention, accordingly, is to provide an oil burner which will produce more perfect combustion and thereby increase the available heat, economize fuel, and prevent the deposit of soot. As shown, I provide a frame surrounding the burner and filling the space between the latter and the sides of the fire box to constrain a large amount of air to pass through the burner from the bottom to the top and cover this passage and the wick chambers with a screen-like member or plate having a plurality of small openings. The theory is not fully clear, but possibly this member breaks up the little globules of oil suspended in the draft and causes an intimate commingling of the fuel and air. At any rate a clear flame of great heat intensity is produced. The screen-like member shown is made in layers, the lower one being of one size of mesh and the other is preferably slightly spaced therefrom and is of finer mesh.

To these ends and also to improve generally on devices of the character indicated, my invention also consists in the various matters hereinafter described and claimed.

In the drawings, Fig. 1 is a perspective view with some parts broken away.

Fig. 2 is a vertical section with the lower part of the burner in side elevation.

Fig. 3 is a plan view of the lower part of the burner.

Fig. 4 is a perspective view, broken away, of a modification of the screen.

The numerals 10 and 12 represent the sides of the usual fire box of a stove in which a cast iron distributer 14 is mounted in any suitable way above the bottom of the usual ash pit. Oil is supplied through a pipe 16 to a four-armed conduit 18 having detachable screw plugs 20 at the ends. Openings 22 and 24 conduct the oil to wicks 26 and 28, respectively, laid in concentric square grooves 30 and 32 of the distributer 14. The center of the distributer 14 has openings 34 admitting air through the bottom to the interior of a perforated square cell 36. Slots 38 in the distributer 14 admit air to the cell formed by the perforated square walls 40 and 42. An outer perforated wall 44 admits air to the outer wick chamber from around the outside of the burner. Thus a pair of concentric square wick chambers or fuel passages 46 and 48 are constituted and air has access from each side through the perforations of the vertical walls. The central cell 36 has an opening 49 at the top; the cell formed by walls 40 and 42 is preferably closed by a top plate 50 and the outer wall 44 is bent outwardly at 52 and can be imperforate. Preferably two similar burners are arranged end to end as shown in Figure 1.

In order to constrain a sufficient amount of air to pass through the burners from the bottom to the top, the space between the burners and the sides and ends of the fire box is closed by a frame 54. It comprises a substantially rectangular plate having square openings fitting the sides of the burners, the central bar 56 closing the space between the burners. The frame rests on the usual ledges 58 and 60 at the upper ends of the fire box.

To prevent the escape of unburned oil particles with the draft and to effect a more adequate intermixing of such particles with air, a screen-like member 62,

or a reticulated plate, is placed over the top of the burner. A second screen-like member 64 of finer mesh, or with smaller openings, is supported over the first, preferably with a little space between as indicated at 66. The screen-like members are arranged a little above the burner and have inclined sides 68 terminating in flanges 70 of which the lower one rests on the frame 54. Combustion apparently begins at the wick 28 and extends to the screens.

In Figure 4, screen-like members 72 and 74 are supported in a rectangular frame 76 which will fit and surround the edges of the burner. The lower layer 72 of coarser mesh rests on wires 78 which connect opposite sides of the frame and these wires rest on the tops of the burner cells. Wires 80 are placed crosswise of the wires 78 and serve to space and support the upper screen-like member of finer mesh.

Although the invention has been described by reference to certain specific constructions, it should be understood that, in its broader aspects, it is not necessarily limited to the forms selected for mere illustrative purposes.

I claim:

1. In apparatus of the character described, the combination, with the fire box of a range, of an oil burner set therein, said oil burner having a plurality of concentric wick chambers with perforated side walls, and a pair of coextensive screen-like plates of fine mesh extending across the fire box over the top of said burner; substantially as described.

2. In apparatus of the character described, the combination with an oil burner having an opening for the passage of air and a surrounding wick chamber, of a member supported over the upper end of said opening and chamber and having a plurality of small openings, and a second member arranged over the first and having a plurality of smaller openings; substantially as described.

3. In apparatus of the character described, the combination with an oil burner having an opening for the passage of air and a surrounding wick chamber, of a screen-like plate covering the upper end of said opening and chamber, and a second screen-like plate of finer mesh arranged over and spaced a little from the first plate; substantially as described.

4. In apparatus of the character described, the combination with an oil burner having an opening for the passage of air and a surrounding wick chamber, of a screen-like plate covering the upper end of said opening and chamber, said member having a flat raised portion and inclined sides; substantially as described.

5. In apparatus of the character described, in combination, a fire box, an oil burner set in said fire box and having an air passage from top to bottom, a screen-like plate covering the top of said burner and passage, a second screen-like plate of finer mesh arranged over the first, and means for closing the space between the burner and the sides of the fire box; substantially as described.

6. In apparatus of the character described, in combination, a fire box, an oil burner set in said fire box and having a passage from top to bottom, a thin plate surrounding the top of said burner and supported on the top of the fire box for closing the space between the burner and the sides of the fire box, and screen-like members of fine mesh supported by said frame and covering the top of said burner and passage; substantially as described.

7. In apparatus of the character described, in combination, a fire box, an oil burner set in said fire box and having an air passage from top to bottom, a frame fitting the sides of said burner and closing the space between the burner and the sides of the fire box, a screen-like member supported by said frame and covering the top of said burner and passage, and a second screen-like member of finer mesh arranged over the first member; substantially as described.

8. In apparatus of the character described, in combination, a fire box, a burner set in said fire box and having means for supplying air and fuel, a screen-like member covering the top of said burner, and a second screen-like member of finer mesh supported directly over the first; substantially as described.

In testimony whereof I hereunto affix my signature.

CHARLES GIAMMATTEO.