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LIQUID FUEL BURNER

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Fig. 1.

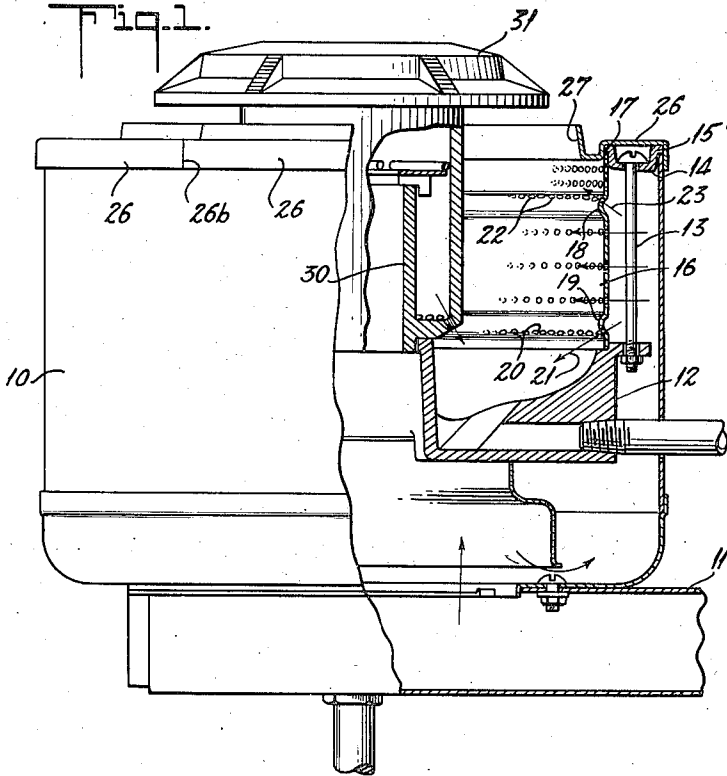


Fig. 3.

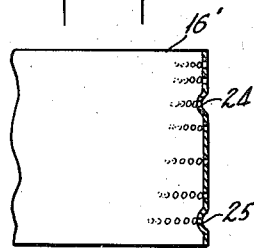
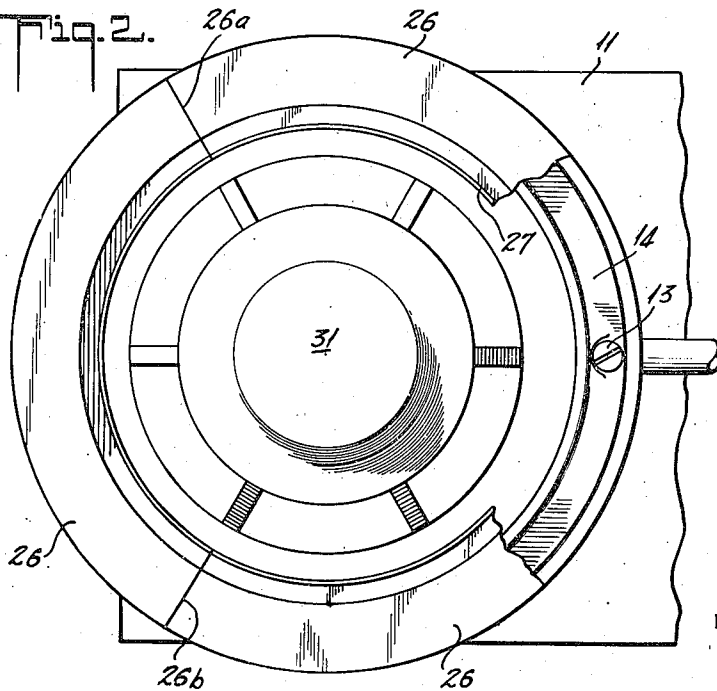


Fig. 2.



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LIQUID FUEL BURNER

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1 Claim. (Cl. 158—91)

1

This invention relates to liquid fuel burners, and is more particularly directed toward vaporizing or pot type liquid fuel burners.

In this class of liquid fuel burners it is customary to employ a perforated sleeve or cylinder 5 above an annular vaporizer or pot, this sleeve forming the outer wall of a combustion chamber and the perforations in the sleeve permitting fresh outside air to enter the combustion chamber. These sleeves or cylinders are customarily 10 made of sheet metal and owing to the intense heat to which they are subjected there is a tendency for them to warp out of shape, becoming egg-shaped or oval instead of remaining circular.

The present invention contemplates providing 15 a perforated sleeve for this purpose having two annular beads preferably inwardly directed which not only provide the ordinary stiffening of the cylinder, but also prevent the cylinder from warping out of shape so that it remains circular 20 instead of becoming egg-shaped or oval. By properly spacing the beads relative to the perforations in the metal from which the cylinders are made it is possible to have the lower row of holes in the perforated cylinders slope downwardly and 25 an upper row of holes slope upwardly. The lower sloping holes aid in directing the air jets downwardly toward the vaporizer while the upper set of holes aid in directing air jets obliquely upwardly into the flame.

A further object of the present invention is to provide oil burners of this general character with a flame constricting ring which instead of being solid as has been customarily employed is made 30 in segments. The segmented ring is less likely to warp out of shape than the solid ring and is more easily removed for cleaning and replacement, when necessary.

The accompanying drawings show, for purposes of illustrating the present invention, an embodiment 35 in which the invention may take form, it being understood that the drawings are illustrative of the invention rather than limiting the same.

In these drawings:

Figure 1 is a side elevational view with parts in section illustrating a pot type burner embodying the present invention;

Figure 2 is a top plan view of the burner with parts broken away;

Figure 3 illustrates a modified form of perforated cylinder.

The burner is provided with an outer annular casing 10 supported on a conduit 11 by which air is supplied to the burner.

2

An annular vaporizer or pot 12 is inside the casing 10 and is supported by bolts 13 which pass through a ring 14 of channel shaped cross section. This ring may be made out of heavy gage sheet steel and has an outer flange 15 resting on the upper edge of the casing 10. A perforated cylinder or sleeve 16 is clamped between the inner shoulder 17 of the ring 14 and the top of the vaporizer 12. This cylinder or sleeve 16 is made 40 from perforated sheet metal (stainless steel), rolled in a nominally cylindrical form and welded. The two beads or corrugations 18 and 19 are rolled into the cylinder. They are preferably so disposed as to provide a lower row of holes 20 with sloping axes 21 and an upper row of holes 22 with sloping axes 23. It has been found that the cylinders with the beads thus formed in them bring the cylinders to proper circular cross section so that they are true when assembled in the burner. The beads also prevent warping out of 45 shape which sometimes occurs with cylinders that do not have the beads.

In the form shown in Figure 3 the cylinder 16' is the same as that above, except that the rows of holes 24 and 25 in the beads have horizontal axes.

The top of the ring 14 as well as the upper edges of the casing 10 and sleeve or cylinder 16 are received in an inverted channel shaped ring 26 which snugly fits about these parts. The ring 26 is made of chrome steel and in the form of segments whose ends meet as indicated at 26a 50 and 26b. These segments have upwardly flaring flame concentrating inner walls 27.

As illustrated in the drawings the vaporizer 12 supports a central air distributor 30 which forms the inner wall of the combustion chamber and this air distributor supports a flame spreader 31 55 above the combustion chamber.

Since it is obvious that the invention may be embodied in other forms and construction within the scope of the claim, I wish it to be understood that the particular form shown is but one of these forms, and various modifications and changes being possible, I do not otherwise limit myself in any way with respect thereto.

What is claimed is:

In a liquid fuel burner, a vaporizing pot, an outer casing, an inner sheet metal cylinder spaced from the casing to form an air chest, a ring of channel shaped cross section with outwardly and inwardly extending flanges fitting the top of the casing and cylinder respectively, bolts securing the ring and pot together, the heads of the bolts being received in the channel of the ring, and a sheet metal cover ring fitting about the first ring

and the upper edges of the cylinder and casing and having an upwardly extending inner flame constricting part, said ring being in the form of a plurality of separable segments.

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