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CHIMNEY FOR LIQUID FUEL BURNERS

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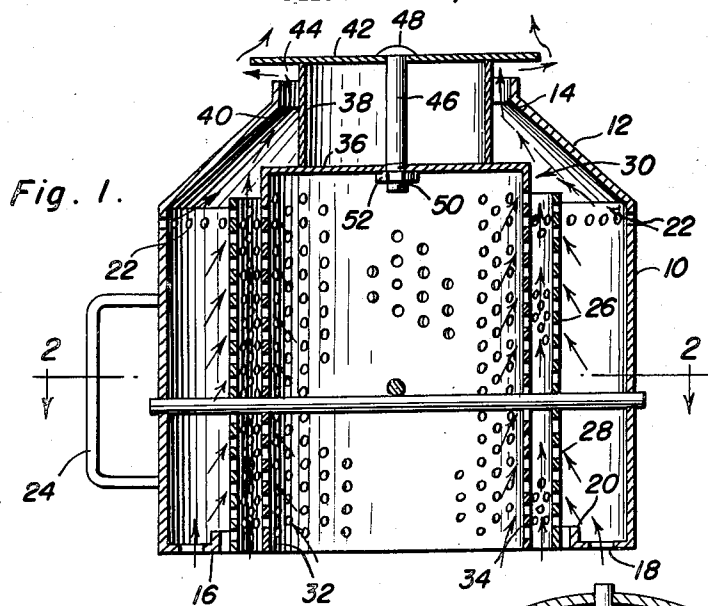


Fig. 2.

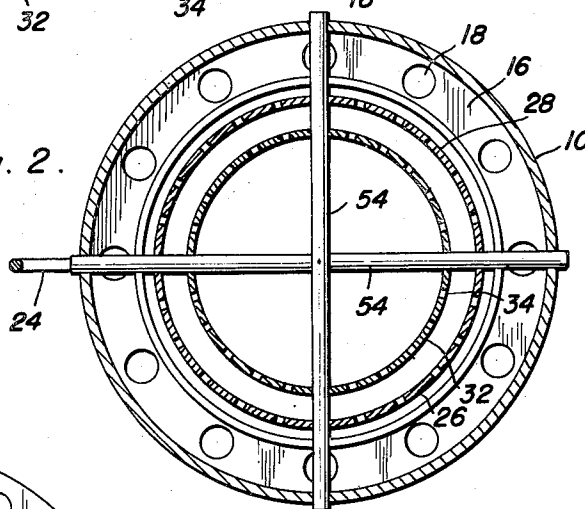
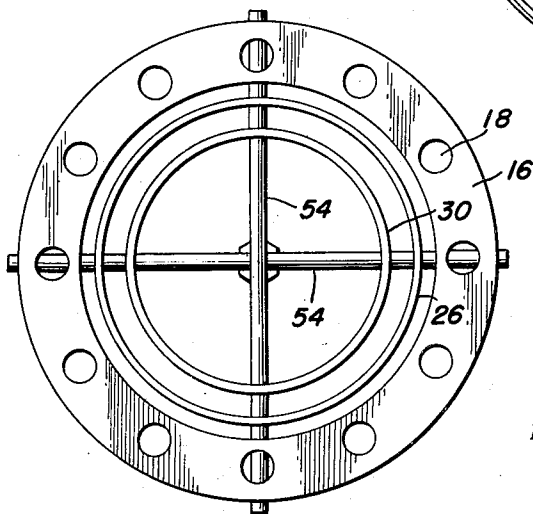


Fig. 3.



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CHIMNEY FOR LIQUID FUEL BURNERS

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3 Claims. (Cl. 158-89)

1 This invention relates to a novel chimney construction for use in conjunction with a wick or wickless type liquid fuel burner, such as a kerosene burner, the primary object of which is to prevent water or other foreign matter from entering the combustion tube of the chimney, thus preventing sudden flaring of flame or the smothering of the flame.

Another object of this invention is to provide a novel chimney construction which will consume less fuel than the ordinary conventional chimneys now in use, hence providing a cleaner and more efficient flame.

Yet another object of this invention is to provide a novel chimney construction which eliminates the need for cleaning and relighting of wet or damp wicks, or kindlers.

Still a further object of this invention is to provide a novel chimney construction for use in connection with a liquid burner which will substantially reduce the smoking of pots and kitchen and will thus effect a saving of time and energy upon the part of the user in cleaning the same.

Yet another object of this invention is to provide a novel chimney construction for use in conjunction with a liquid fuel burner which makes possible a more accurate control of flame for various types of cooking or heating.

A particular feature of this invention is the provision of a chimney which includes an outer casing having an upwardly tapered neck portion and a central opening associated with this neck portion, the outer casing being provided with a plurality of spaced apertures adjacent the taper of the neck portion and an inner rim or perforated flange secured to the bottom of the casing. This arrangement of apertures provides a very efficient means for the circulation of air upwardly through the casing for the proper ventilation of and spreading of the flame jutting out of the central opening. In addition, a disk or cover plate is provided of greater diameter than the neck portion of the outer casing which is positioned to overlie the central opening and serve as a shelf to retain water and other foreign matter and prevent them from entering the combustion chamber.

These, together with various ancillary objects and features of the invention which will later become apparent as the following description proceeds, are attained by the device, a preferred embodiment of which has been illustrated by way of example only in the accompanying drawings, wherein:

Figure 1 is a vertical sectional view of the

2 chimney construction of the instant invention, some parts being shown in elevation;

Figure 2 is a transverse horizontal sectional view of the chimney taken substantially on the plane of section line 2-2 of Figure 1; and

Figure 3 is a bottom plan view of the chimney. Specific reference is now made to the drawings. In the several views in the accompanying drawings and in the following specification similar reference characters indicate corresponding elements throughout.

Generally indicated at 10 is an outer casing or container, preferably cylindrical in shape, which has an upwardly tapered neck portion 12 and a central annular opening 14 at the upper end of this neck portion. The bottom of the outer casing 10 is provided with an inner rim or flange 16 having a plurality of circumferentially spaced perforations 18. While the inner rim 16 may simply be a flat extension or flange, it is preferably provided with a vertical integral lip 20.

The outer casing 10 is further provided with a plurality of circumferentially spaced apertures 22 which are positioned in the walls of the casing just below but proximate to the taper. The outer casing 10 may be additionally provided with a conventional handle portion 24.

Positioned within the cylindrical portion of the outer casing 10 is an outer combustion sleeve 26, which is also preferably cylindrical in shape, which is provided with a plurality of spaced apertures 28.

Concentrically positioned within this outer combustion sleeve 26 is an inner combustion sleeve 30 which consists of a lower, preferably cylindrical, portion 32 having a plurality of apertures 34. The inner combustion sleeve 30 is further provided with a top plate 36 to which is secured a reduced, preferably cylindrical, portion 38 which is not perforated. As will be seen from Figure 1, this reduced portion 38 is located in the tapered portion or neck of the outer casing and is spaced from the walls of the casing to produce an annular flame opening 40.

A cover plate or disk 42 is provided which may be secured in any desired manner to the inner combustion sleeve 30, which disk is greater in diameter than the diameter of the central opening 14 in the tapered neck of the outer casing and which is positioned to overlie the central opening 14 and to be spaced from the upper edge of the tapered neck 12. Thus, a second flame opening 44 is provided which is communicative with the flame opening 40. While the disk or cover plate 42 may be secured in any manner

to the inner combustion sleeve 30, as stated hereinabove, the preferred manner of securing said cover plate to said inner combustion sleeve 30 consists of providing a pair of aligned apertures, one in the cover plate 42 and one in the top plate 36 of the inner combustion chamber, through which apertures extends a bolt 46 having a head portion 48 abutting the cover plate 42 and an externally threaded portion 50 at the end opposite the head to receive a conventional internally threaded nut 52 to engage the threaded portion 50.

To secure the outer casing, the inner combustion sleeve, and the outer combustion sleeve together in a unitary structure, a pair of crossed rods 54 are provided which are secured centrally to each other and which extend through appropriate openings in the side walls of the outer casing, the inner combustion sleeve, and the outer combustion sleeve. Of course, these cross rods may additionally be welded or riveted to the side walls of these members.

In practical operation, the flame from the liquid fuel burner will pass between the walls of the inner and outer combustion sleeves and up through the tapered neck of the outer casing and eventually out through the flame opening 44 and around the cover plate 42. Air will pass up the inner combustion sleeve and out through the apertures provided therein to be admixed with the flame, while air will also be drawn in through the apertures 18 provided in the rim 16 of the outer casing and will be admixed with the flame in the top end of the tapered portion or neck 12. The apertures 22 provided in the outer casing adjacent the tapered neck portion 12 will serve as means for the inlet of cold air and assist in the circulation of air in the outer casing. By providing a cover plate 42 which is larger in diameter than the central opening through which the flame passes, water or any other foreign matter will be prevented from falling into the combustion chambers.

In view of the foregoing description taken in conjunction with the accompanying drawings, it is believed that a clear understanding of the device will be quite apparent to those skilled in this

art. A more detailed description is accordingly deemed unnecessary.

It is to be understood, however, that even though there is herein shown and described a preferred embodiment of the invention the same is susceptible to certain changes fully comprehended by the spirit of the invention as herein described and the scope of the appended claims.

Having described the invention, what is claimed as new is:

1. A chimney for a liquid fuel burner comprising an outer casing including an upwardly tapered neck portion having a central opening and spaced apertures adjacent the neck portion, an inner and an outer perforated sleeve concentric with said casing, a cover plate of larger diameter than said neck portion secured to the inner sleeve, spaced from said outer casing and overlying said central opening, and means interconnecting said sleeves with said outer casing, said outer casing including an inner perforated flange secured to the bottom thereof.

2. The combination of claim 1 wherein said means includes crossed rods.

3. The combination of claim 1 wherein said inner sleeve includes a reduced upper portion and a lowered perforated portion.

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