

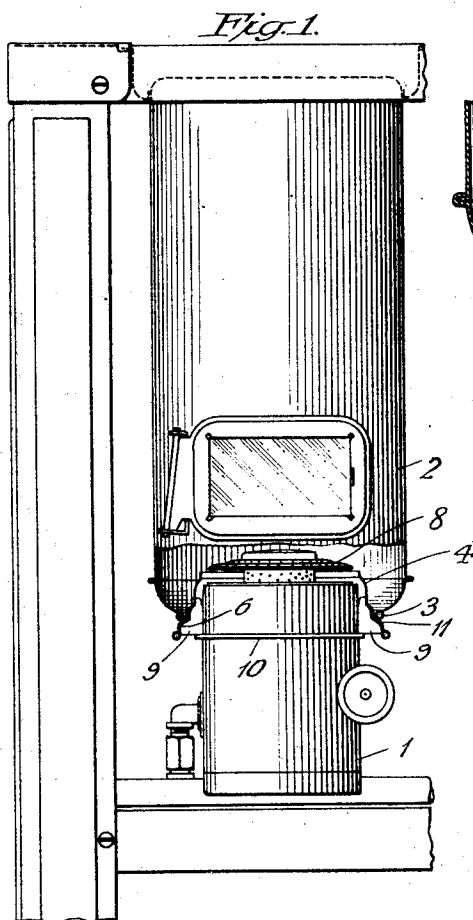
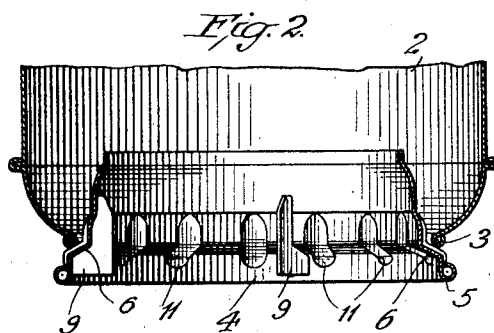
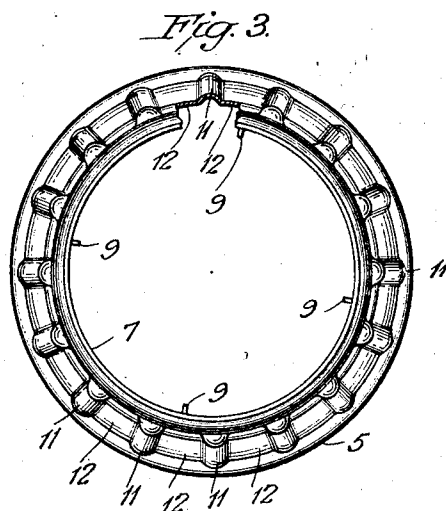
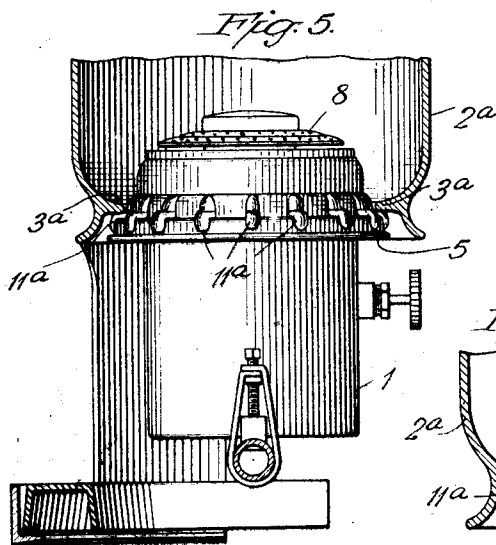
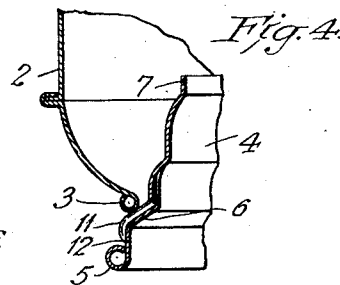
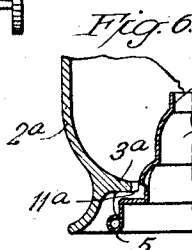
Jan. 31, 1928.

L. T. WILCOX

1,657,652

OIL STOVE

Filed Nov. 4, 1927



INVENTOR.

LEWIS T. WILCOX.

BY *Victor D. Bost*
ATTORNEY.

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1,657,652

UNITED STATES PATENT OFFICE.

LEWIS T. WILCOX, OF PEEKSKILL, NEW YORK.

OIL STOVE.

Application filed November 4, 1927. Serial No. 230,938.

This invention relates to burner collars for use in stoves and heaters and the like and which are interposed between the burner and the combustion drum thereover to control the amount of air passing from the outside into the combustion chambers. These collars are also frequently utilized to support the lower end of the drum in position when used in connection with oil stoves.

It has been the practice heretofore to construct the bottom end of the drum to fit tightly upon the particular burner collar to be used in conjunction therewith and to provide a predetermined number of perforations in the lower end of the drum to admit a definite amount of air from the exterior into the combustion chamber, the lower end of the drum which includes the perforations being turned inwardly substantially horizontally. It has been found, however, that the holes tend to become partially closed by the enamel or other protective surface covering, and also to become clogged by the lodgement of foreign materials which drop down inside the drum. It is very difficult therefore to be certain of there being apertures of a certain and definite total area capable of admitting the proper amount of air there-through in the shell after they have been completely finished.

It is the purpose of my invention to provide a burner collar which will coact with the drums always to allow a predetermined amount of air to pass through the joint between them which will largely prevent the accumulation of foreign matter in the drum, and which will be simple and economical to manufacture involving little change in the present processes.

In accordance with my invention I provide a burner collar which may be substantially of the same shape as those heretofore used, but which has its seating ledge or shoulder, which carries the drum, formed with spaced elevated portions thereon which contact with and support the lower end of the drum. In effect I flute the seating portion of the collar, thus providing channels between the high points forming air ducts which will permit air, in predetermined quantities in accordance to the size and design of the flutings, to enter between the lower end of the drum and the burner collar and pass into the combustion cham-

ber. These same channelways will provide paths for the escape of any foreign matter which may settle in the drum and tend to collect in the lower end thereof, the restricted lower end of the drum being imperforate and having sufficient downward slope to guide refuse to the bottom. It is also within the contemplation of this invention to embody the above features in a burner collar having a seating surface the contacting face of which is substantially the portion of a sphere and as is disclosed in my copending application Serial No. 223,285, filed October 1, 1927.

A further detailed description will be given in connection with the drawings in which:

Fig. 1 is a front elevation partly in section of a portion of an oil stove embodying my invention;

Fig. 2 is a section through the lower end of a burner drum and associated burner collar;

Fig. 3 is a plan of a burner collar construction in accordance with my invention;

Fig. 4 is an enlarged sectional detail through one portion of a burner drum and collar;

Fig. 5 is a front elevation partly in section of a water heater employing a burner collar construction in accordance with this invention, and

Fig. 6 is an enlarged sectional detail of a portion of the lower end of the heater casing and associated burner collar.

With particular reference to Figs. 1, 2 and 4 there is shown, by way of illustration, an application of my invention to an oil stove comprising generally a burner shell 1 having the customary combustion drum 2 supported thereover. The upper end of the drum projects as usual into the stove top part while the lower end is drawn in to a reduced diameter and terminates in a bead 3 which surrounds the upper end of the burner shell. The foregoing parts may conveniently be stamped or spun from sheet metal and thus cheaply manufactured.

A burner collar 4 is interposed between the lower end of drum 2 and the burner shell 1 which collar may be a cylindrical sleeve of frustoconical shape similar to such collars as customarily used. The lower edge of the collar is considerably larger in diameter than the burner shell and is curled into a strengthening bead 5. From this

bead the collar extends vertically upwardly and then upwardly and inwardly forming a seating surface or ledge 6 the mean diameter of which is approximately that of the lower beaded edge of the combustion drum. From this seating ledge the sleeve continues upwardly at a constantly decreasing diameter till at its upper edge 7 it is of a diameter slightly larger than that of the heat spreader 8 placed over the upper end of the burner. The collar is provided with four spaced webs 9 extending radially inwardly from its inner surface, which contact with the burner shell to center the collar therearound and which contact with a circular bead 10 spun around the shell to position the collar vertically thereon.

The spherical seating ledge 6 has a plurality of spaced vertical ribs or projections 11 struck outwardly therefrom, which projections constitute the points of support for the lower edge of the drum. The projections as shown in this particular construction constitute merely elevations in a spherical surface and the spherical shape is maintained, with the consequence that the bottom edge of the drum rests upon an interrupted instead of a continuous spherical surface. Hence exactitude in aligning the drum axially with the burner collar is not required, and the drum may be considerably tilted to accommodate a relatively misplaced opening in the heat collector or other stove top part into which the upper end of the drum fits. This spherical shape of the seating ledge of the burner collar is disclosed and claimed in my copending application Serial No. 223,285.

The projections 11 necessarily provide channelways 12 therebetween which permit air to pass therethrough into the combustion drum and it is obvious that the quantity of air passing therethrough is directly dependent upon the total area of the channelways, and is not varied by tilting the drum. This area may be varied in accordance with particular conditions by varying the size of the projections relatively to the channels therebetween.

In Figs. 5 and 6 there is shown an application of my invention to a water heater wherein a burner 1 is utilized to supply heat to a combustion drum 2^a. In this instance the drum is preferably cast and has its lower end brought in to form a flange 3^a which rests upon the struck up projections 11^a. The projections in this case need not be, and are not shown as curved to form portions of a sphere but instead they are shown as flat or horizontal, thus providing a series of flat supports upon which the lower edge of drum 2^a may rest. In all other respects the construction is the same as that described in relation to Figs. 1, 2 and 4. This feature is useful with the cast drum of the water

heater since variations in size of the flange 3^a do not matter the amount of air admitted being determined by the size of the ribs 11^a and not at all by the fit of the flange about the collar.

From the above it readily follows that I have provided a collar for connecting the combustion drum to the burner which permits of perfectly controlled combustion at all times and also allows of considerable variance in size and relation of parts in assembly and one also which minimizes the accumulation of foreign matter in the combustion drum, thus providing a more safe and sanitary stove. Any accumulated material which is too large to drop through the passages between the ribs will fall out when the drum is raised. In the water heater the burner is swung laterally out of the drum or casing to afford easy access for cleaning and renewing the wick, as shown and fully disclosed in my copending application Serial No. 83,899, and any accumulated foreign matter will be dislodged in that way.

Obviously the spaced passages for the admission of air may be provided by corrugating the bottom edge of the drum. It is apparent that other changes may be made in the details of the structures above described without departing from the spirit and scope of the invention as defined in the following claims.

I claim:

1. In an oil stove or the like, in combination, a burner shell, a burner collar surrounding the shell, and a drum resting with its lower end upon the burner collar, the seating surface of the collar and the adjacent end of the drum being so relatively shaped as to provide circumferentially spaced passages between them for the admission of air.

2. In an oil stove or the like, in combination, a burner shell, a burner collar surrounding the shell, and a drum having its bottom portion inwardly turned and imperforate and resting with its lower end upon the burner collar, the seating surface of the collar and the adjacent end of the drum being so relatively shaped as to provide circumferentially spaced passages between them for the admission of air.

3. A burner collar for oil stoves and the like comprising a collar adapted to surround a burner, said collar having an annular seating surface adapted to support a combustion drum thereupon, said surface having spaced contacting portions and air channels therebetween.

4. A burner collar for oil stoves and the like comprising a cylindrical sleeve having an annular seating surface adapted to support a combustion drum thereover, said surface having spaced raised contacting portions thereon.

5. A burner collar for oil stoves and the like comprising a cylindrical sleeve having an annular fluted seating surface adapted to support a combustion drum thereover.

6. A burner collar for oil stoves and the like comprising a collar adapted to surround a burner, said collar having an annular seating surface having spaced contacting portions and air channels therebetween, the contacting faces of said portions being substantially portions of a sphere and adapted to support a combustion drum thereover.

7. A burner collar for oil stoves and the like comprising a cylindrical sleeve having an annular seating surface, said surface having spaced raised contacting portions thereon, the contacting faces of which are substantially portions of a sphere.

8. A sheet metal burner collar for oil stoves and the like comprising a cylindrical sleeve having an annular seating surface, said surface having spaced struck up portions arranged around said surface and adapted to support a combustion drum thereover.

9. In an oil stove or the like, the combination with a combustion drum and a burner shell, of a burner collar interposed therebetween to support said drum and control the amount of air entering said collar comprising a cylindrical sleeve surrounding said burner and having a seating surface upon which the lower end of said drum rests, said surface contacting with said drum at spaced points whereby a predetermined amount of air may enter the combustion drum between the points of contact with said collar.

10. In an oil stove or the like, the combination with a burner shell and a combustion drum, of a burner collar interposed therebetween to support said drum and control the amount of air entering therein, said collar comprising a cylindrical sleeve surrounding said burner and having an annular fluted seating surface upon which the lower end of the drum rests.

11. In an oil stove or the like, the combination with a burner shell and a combustion drum, of a burner collar interposed therebetween to support said drum and control the amount of air entering therein, said collar comprising a cylindrical sleeve sur-

rounding said burner and having an annular seating surface having spaced raised portions and channels therebetween upon which the lower edge of said drum rests, whereby a predetermined amount of air may enter said drum through the channels between said raised portions.

12. In an oil stove or the like, the combination with a burner shell and a combustion drum, of a burner collar interposed therebetween to support said drum and control the amount of air entering therein, said collar comprising a cylindrical sleeve surrounding said burner and having an annular seating surface having spaced raised portions and channels therebetween upon which the lower edge of said drum rests, whereby a predetermined amount of air may enter said drum through the channels between said raised portions, the contacting faces of said raised portions being substantially portions of a sphere.

13. In an oil stove or the like, the combination with a burner shell and a combustion drum, of a sheet metal burner collar interposed therebetween, to support said drum and control the amount of air entering therein, said collar comprising a cylindrical sleeve surrounding said burner and having a seating surface having a plurality of struck up seating portions upon which the lower end of said drum rests, whereby a predetermined amount of air may enter said drum between said struck up portions.

14. In an oil stove or the like, the combination with a burner shell and a combustion drum, of a sheet metal burner collar interposed therebetween, to support said drum and control the amount of air entering therein, said collar comprising a cylindrical sleeve surrounding said burner and having a seating surface having a plurality of struck up seating portions upon which the lower end of said drum rests, the contacting faces of which are substantially portions of a sphere, whereby a predetermined amount of air may enter said drum between said struck up portions.

In witness whereof, I hereunto subscribe my signature.

LEWIS T. WILCOX.