Nov. 10, 1936. R. HOFFMAN 2,060,317

BURNER AND DRUM FOR BLUE FLAME OIL STOVES

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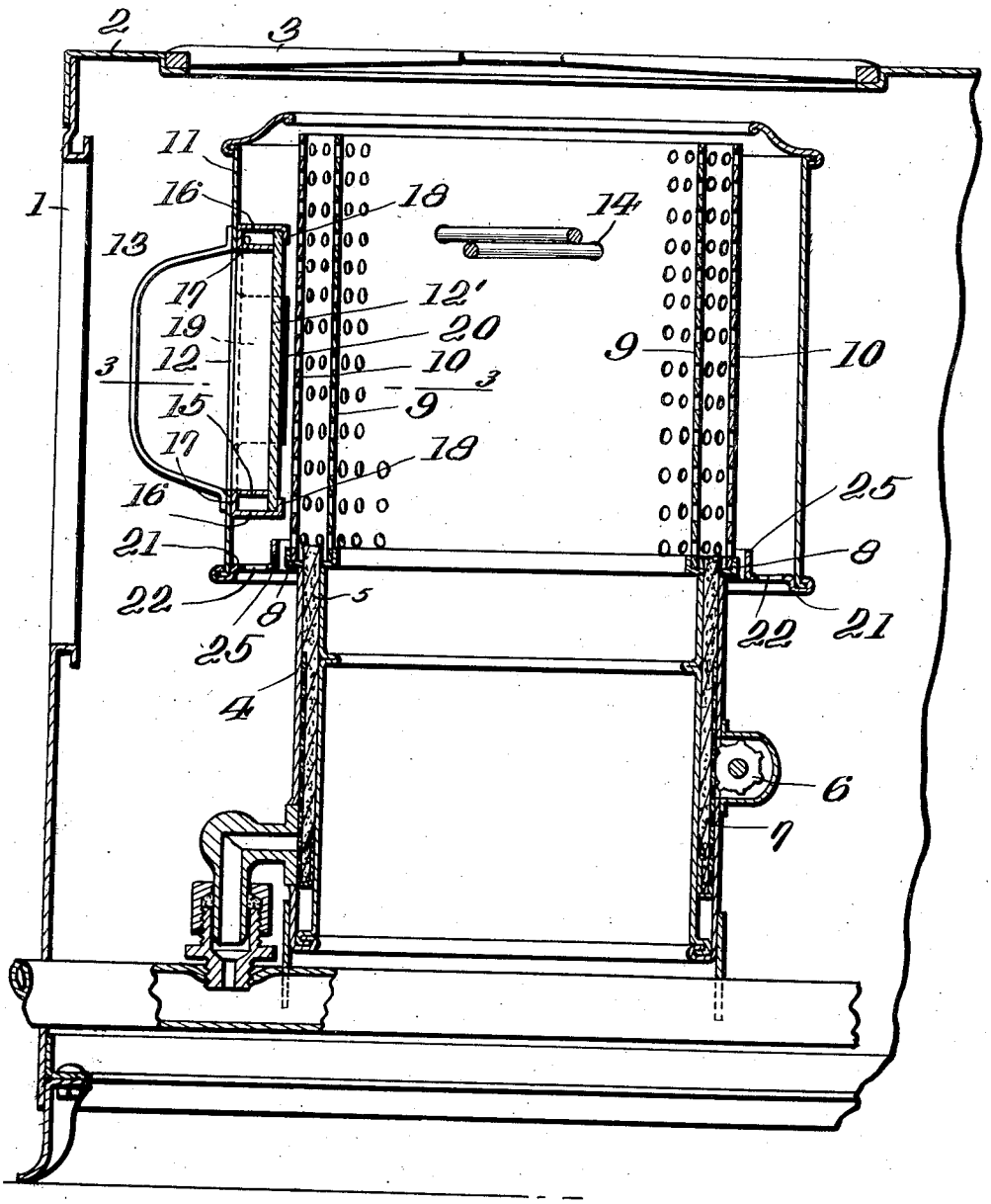


FIG. 1.

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FIG. 2.

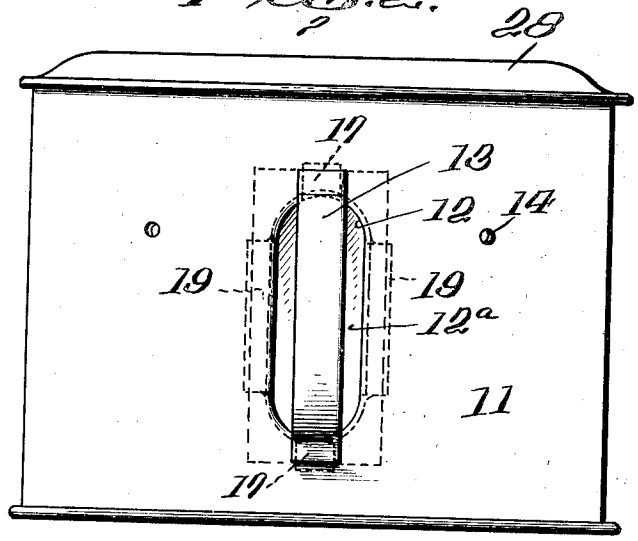


FIG. 3.

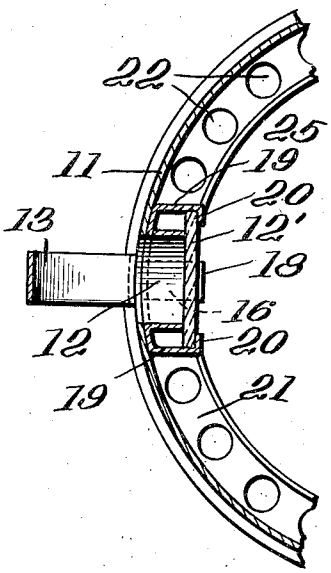


FIG. 5.

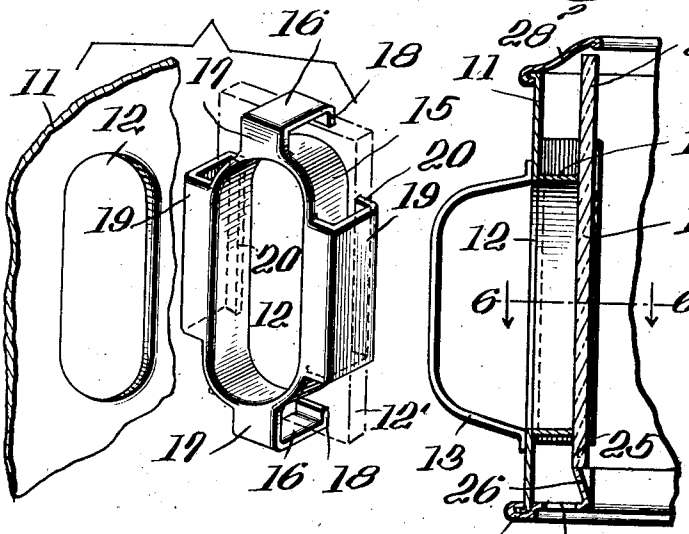
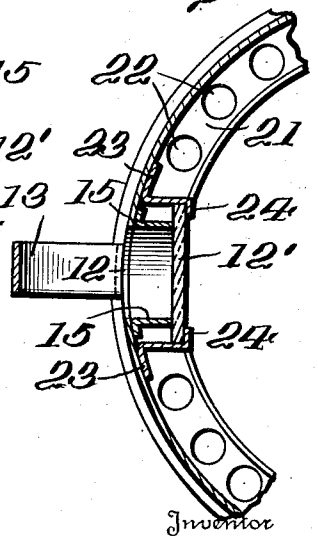


FIG. 4.

FIG. 6.



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Fig. 7.

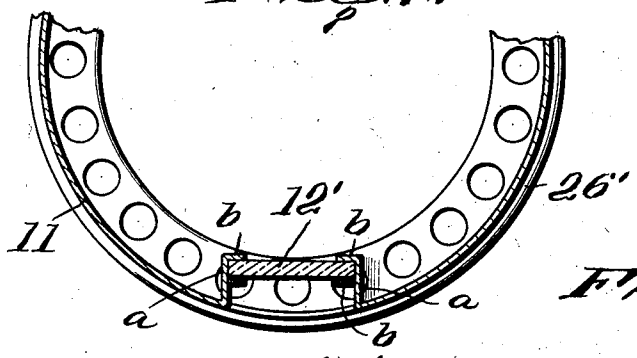


Fig. 8.

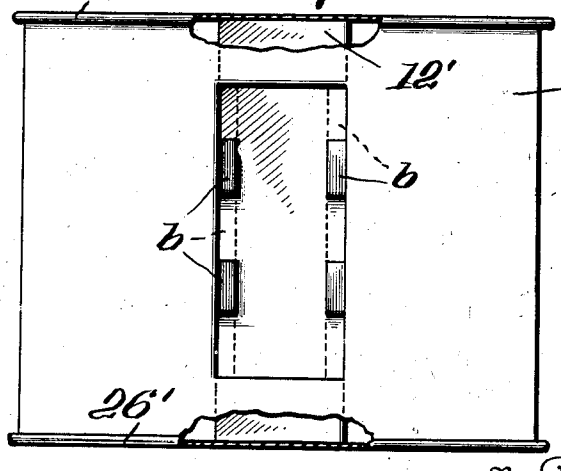
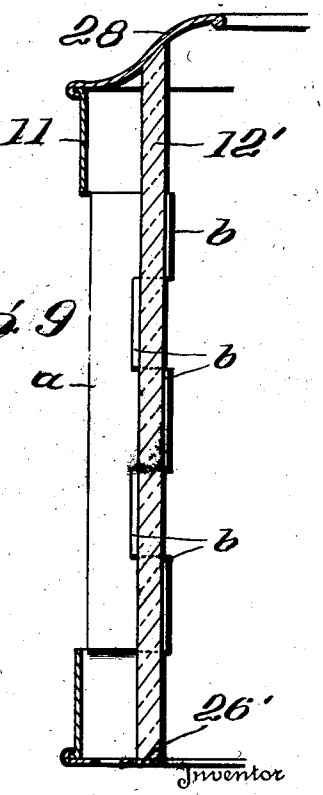


Fig. 9.



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2,060,317

BURNER AND DRUM FOR BLUE FLAME OIL STOVES

Rudolph Hoffman, Rocky River, Ohio, assignor to American Stove Company, St. Louis, Mo., a corporation of New Jersey

Application April 18, 1934, Serial No. 721,231

2 Claims. (Cl. 158—88)

This invention relates to improvements in burners and drums for blue flame oil stoves.

The primary object of the present invention is to provide an outer drum for oil stoves with an opening through which the operator may see the blue flame and be enabled thereby to regulate the height of the flame.

This may be done in the several manners described hereinafter without departing from the primary invention.

The present improvement is to provide an opening in the drum, the opening being so located and so constructed that the flame of the burner is visible when the top of said flame is below the top of the chimney to prevent it from being extinguished and to assist in regulation of the flame to the desired height for the purpose of cooking or heating, as may be desired.

I desire it understood that the present improvement may be used either in a stove for cooking purposes or in a stove that is utilized for heating purposes.

The particular type of burner here shown is the form which consists of inner and outer perforate walls and the flame is between the walls.

In the accompanying drawings:

Figure 1 is a vertical central sectional view of a burner having the present improvement applied thereto.

Fig. 2 is an outside elevation of the drum which is provided with an opening through which the flame is visible to the operator.

Fig. 3 is a horizontal sectional view on the line 3—3 of Figure 1.

Figure 4 is a perspective view showing one form of support for the transparent wall and a section of the outer wall having an opening to which the improvement is applied.

Fig. 5 is a vertical sectional view of the drum with the transparent wall taken centrally through the opening made in the wall.

Fig. 6 is a horizontal section of Figure 5 taken on the line 6—6.

Fig. 7 is a horizontal section taken through the drum 11 showing a modified construction for supporting the glass.

Fig. 8 is a front elevation of Figure 9.

Fig. 9 is a vertical section taken centrally through the opening in the drum.

This invention is applied to burners for either cooking or heating purposes. The burners as here shown is utilized as a cooking burner. I will first describe the preferred form of the invention. The upper part 2 of the stove frame 1 is provided with the usual grid or grate portion 3 which supports any form of cooking utensil placed thereon. The burner has the ordinary form of wick sleeves 4, which in the form of burner here shown are annular and consists of an outer and an inner annular sleeve which are located a sufficient distance apart to accommodate a wick 5. This wick is vertically adjustable by means of an ordinary spur or other wheel 6 which extends inward through an opening in the outer sleeve 4 to engage a usual wick enclosing sleeve 7 which also acts as a rack with which the wheel 6 engages. While I show a wick construction, yet the present improvement may be applied to the well known "wickless" type of burner. The wick containing portion of the burner may be supported in the frame 1 in any desired manner without in any way affecting or varying the present improvements. The upper ends of the wick sleeves 4 are provided with inwardly and outwardly extending L-shaped sleeve portions 8 forming flanges and the inner and outer perforated chimneys 9 and 10 are located between the upwardly extending wick and the vertical portions of the L-shaped flanges as shown. It is also well known, though not here shown, that the inner and outer perforated chimneys 9 and 10 are connected together and are removable together from the said wick sleeve portions 4.

It is well known and well understood by those skilled in this art that when the burner is in operation the blue flame extending between the perforated chimneys 9 and 10 clearly shows inwardly extending globular-like portions and these portions of the flame should be approximately blue when the burner is in proper operation. It is difficult to observe the flame between these chimneys and especially when the burner is located in a frame as here shown which makes the problem more difficult than it otherwise would be. The burner is provided with an annular drum 11 which surrounds the said perforated chimneys.

In carrying out the present invention I provide the drum 11 with a vertical opening 12. This vertical opening is preferably in the form shown in Figures 2 and 4. It is common to provide the drum 11 with a handle 13 for the purpose of handling the said drum. I have heretofore stated that the two perforated chimneys are attached together and will state also that the drum is attached to the said chimneys. This attachment usually consists in passing rods 14 through the said perforated chimneys and also the drum whereby they are attached and removable together. These rods usually extend at right angles to each other and one is placed in a horizontal

plane below the other. By reason of these connecting rods the said chimneys and the said drum are removable so that the operator can lift them for exposing the wick for lighting or other purposes. As shown, there is a flange 15 which extends around the opening 12 of the drum 11 and a piece of glass 12' is supported against the inner edge of the flange 15. There is provided as shown in Figures 2, 3, and 4 of the drawings, U-shaped arms 16 that have their inner portions 17 attached to the outer edge of the flange 15 or these arms may be attached directly to the said drum. The inner ends of these arms 16 are turned inward as shown at 18 and hold the glass 12' vertically in position against the inner edge of said flange 15. For the purpose of holding the said glass from sliding horizontally and holding it in proper position to close the said opening 12 there is provided two horizontal arms 19 which extend from the outer edge of the flange 15, as shown in Figure 4, or these arms may be attached directly to the drum portion 11. The inner ends 20 of these arms 19 are bent inwardly as shown in Figure 4. From the foregoing it will be observed that the glass 12' is held against the inner edge of the surrounding flange 15 and it closes the inner end of the opening 12. The lower end of the drum 11 has an inwardly extending annular member 21 which is provided with a series of air openings 22 through which air flows upward through the drum.

From the foregoing described construction it will be observed that the said flange 15 and the glass 12' form a housing for the said opening and the glass is located adjacent to the openings in the outer perforated chimney 10. By reason of the arrangement just described the glass is near the outer perforated chimney 10 and it is found in operation that all reflections are cut out so that the operator can clearly see the color of the flame or globules through the perforations in the outer chimney 10. By placing the handle in the relation explained in respect to the opening 12 there is a balanced appearance with no mechanical disadvantage and the handle serves in a way to protect the said glass 12'. Attention is directed to the fact that preferably the opening is made wider than the said handle which aids in the observation of the flame through the said opening. It is clear from the foregoing description that the flange 15 extends entirely around the opening 12 and that the transparent wall 12' rests against the inner edge of the said flange, thus placing the said transparent wall between the outer perforated tube 10 and the surrounding drum 11. This naturally forms what might be termed a depressed box or housing and it naturally cuts out many reflections that are clearly visible where the said transparent wall is flush with the outer side of the drum 11. However, applicant's novelty resides in forming an opening in the outer drum and attaching and building an inwardly extending housing around the said opening which applicant believes has never been done in this art before. This construction aside from cutting out many of the reflections does not in any manner affect the flow of air to the perforations in the outer perforated drum, which applicant believes to be another novel feature.

I have thus far described one means for supporting the said glass. However there are various other ways. For instance in Figures 5 and 6 it will be observed that the flange 15 is present as in Figure 4 and there is provided Z-shaped members 23 arranged vertically at opposite sides of the said flange. The inner ends of these Z-shaped members 23 are provided with inwardly extending portions 24 which engage the inner side of the said glass 12' and hold the outer side of the glass in engagement with the inner edge of the flange 15. In this construction it will be observed that the glass 12' is made longer than it is in Figure 4 and the lower end 25 of the glass rests on the upwardly extending end 26 of the member 21 and holds the said glass in position. The upper end 27 of the glass is in a line with an inwardly extending annular flange 28 located at the upper end of the drum. The glass can be placed in positon or removed or replaced by the bending outwardly of one of the arms 24.

I have here shown the preferred constructions for carrying out the present improvement, but I wish it understood that these may be varied without departing from the present invention so long as they are within a reasonable interpretation of the appended claims.

Another modification of the means for holding the glass 12' is shown in Figures 9, 10 and 11.

In this case the glass or transparent wall 12' extends throughout the length of the drum and its lower end rests on an inwardly extending flange 25', which is the equivalent of the flange 26 hereinbefore described. In this modification the upper end of the glass 12' is substantially in engagement with the annular flange 28. The housing, so to speak, in this event for assisting in holding the glass 12' consists of an inwardly extending vertical flange *a* located at each side of the opening 12 and these flanges are provided with inwardly extending lips *b* which are located at the inner and outer sides of the glass 12'.

I claim:

1. In a burner the combination of a pair of parallel vertically extending perforated combustion tubes, means located between their lower ends for producing a flame, a single vertically arranged drum surrounding the said tubes and spaced apart therefrom, said drum being provided with a vertically arranged opening, a flange surrounding said opening and narrower than the space between the said drum and the outer combustion tube and extending inwardly from the said opening, said flange having its outer edge located against the drum and its inner edge stopping at a point midway between the drum and the outer combustion tube, and a vertical transparent wall located against the inner edge of said flange and serving together with the said flange to form an imperforate inwardly extending housing.

2. In a burner, the combination of parallel vertically extending perforated combustion tubes, means located between the lower ends of the tubes for producing a flame between them, a vertical drum surrounding said perforated combustion tubes, said vertical drum being provided with a vertically arranged opening, an inwardly extending flange surrounding said opening located between said drum and the outer combustion tube, and a vertical transparent wall supported at the inner edge of said vertically extending flange, said transparent wall positioned between said vertical drum and the outer perforated combustion tube.

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