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S. F. JACKES

2,178,635

STOVE

Filed Jan. 21, 1938

FIG. 1.

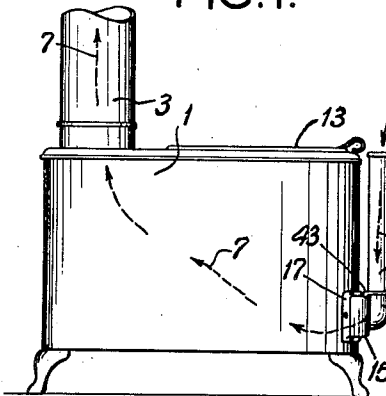


FIG. 5.

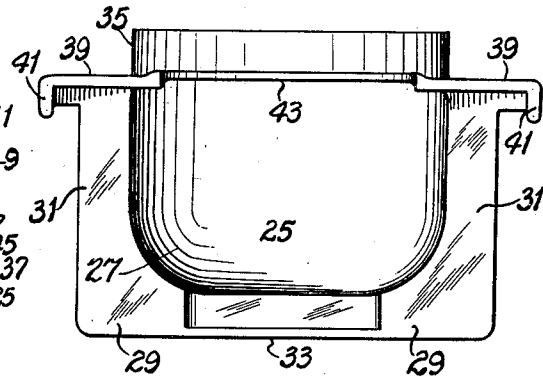


FIG. 2.

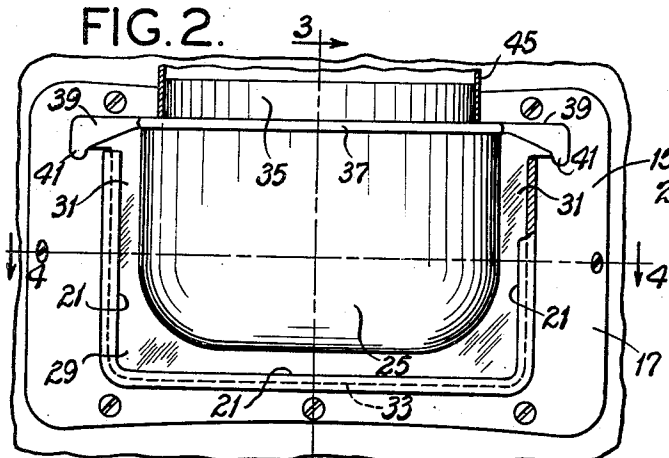


FIG. 3.

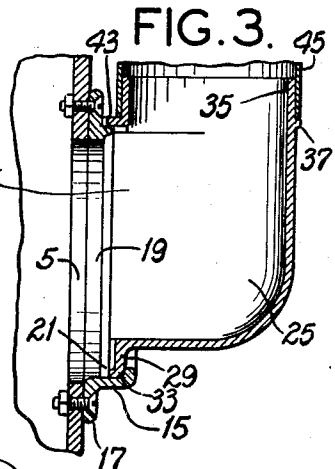


FIG. 4.

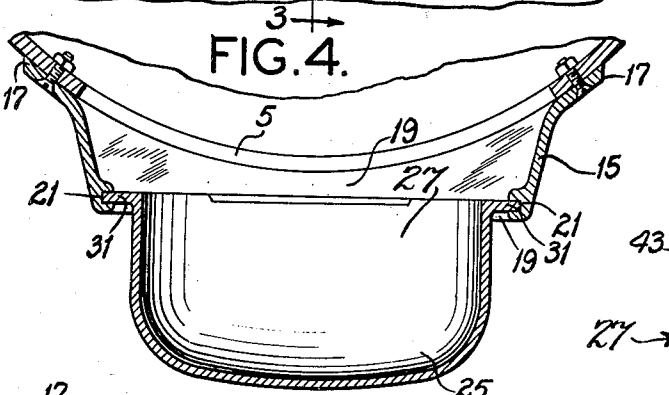


FIG. 6.

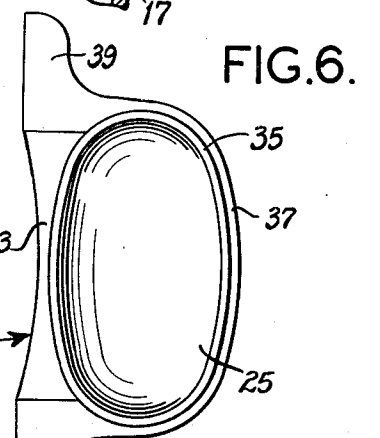
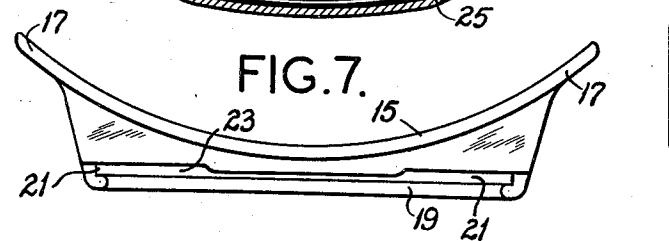


FIG. 7.



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UNITED STATES PATENT OFFICE

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STOVE

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1 Claim. (Cl. 285—143)

This invention relates to stoves, and with regard to certain more specific features, to draft apparatus for stoves.

Among the several objects of the invention may be noted the provision of a preheating flue for heating intake air before sending it through a stove; the provision of preheating apparatus which sends the preheated air through the ash-door opening and is removable from the opening so that ashes may be removed; and the provision of apparatus of this class which is of substantially constant efficiency against air leakage throughout its life and which is simple to construct and to operate. Other objects will be in part obvious and in part pointed out hereinafter.

The invention accordingly comprises the elements and combinations of elements, features of construction, and arrangements of parts which will be exemplified in the structures hereinafter described, and the scope of the application of which will be indicated in the following claim.

In the accompanying drawing, in which is illustrated one of various possible embodiments of the invention,

Fig. 1 is a side elevation of a stove showing the application of the invention thereto;

Fig. 2 is an enlarged, fragmentary front elevation;

Fig. 3 is a vertical section taken on line 3—3 of Fig. 2;

Fig. 4 is a horizontal section taken on line 4—4 of Fig. 2;

Fig. 5 is an elevation of a draft inlet elbow, viewed from the inside;

Fig. 6 is a plan view of Fig. 5, turned at 90° clockwise; and,

Fig. 7 is a plan view of a frame member for receiving the elbow of Fig. 5.

Similar reference characters indicate corresponding parts throughout the several views of the drawing.

Referring now more particularly to Fig. 1, there is shown at numeral 1 a stove having the ordinary flue 3 at the rear of the stove. At the front of the stove is the ordinary draft inlet opening 5 (Fig. 3) which also should serve as a point from which ashes may be removed from the stove. The necessary draft for the stove ordinarily takes the path shown at numeral 7 in Fig. 1, that is, from the lower front portion of the stove to the upper rear portion thereof.

At numeral 9 is shown a length of stove pipe or the like at the upper end of which is a draft control damper 11. Pipe of this class has heretofore been used in connection with stoves, the

pipe having been attached permanently by suitable means at its lower end located over the draft inlet 5.

The purpose of the down-draft pipe was to cause the air for the draft to be preheated by radiation from the body of the stove, as said air passed downwardly. The disadvantage of this structure has been that it permanently closed the draft inlet opening 5, so that ashes could not be removed except through the top opening of the stove or, in the constructions wherein ashes could be removed, complications inhered, and a device inferior to the present one was obtained at an expense to the user which was greater than the cost of the present device. The top opening of the stove in Fig. 1 is shown as being covered by a lid 13.

The present invention permits the use of a down-draft preheating flue for directing air through the ash removal opening, but by improved but economical means permits said opening to be opened or covered.

My invention comprises a preferably cast-iron frame 15 having a curved flange 17 which is bolted to the curved body of the stove 1 and around the opening 5. This frame includes a three-sided extension having an opening 19 around the sides and bottom of which is formed a groove 21. The top portion of the opening 19 does not have the extension carrying said groove 21, but is open as shown at numeral 23 in Fig. 7.

It will be observed that the opening within the grooves 21 is in a single plane. The frame 15 at the flange 17 adapts itself to the contour of the stove, and the opening within the groove 21 is adapted slidably to receive a flat member to be described.

At numeral 25 is shown a preferably cast-iron elbow at the lateral outlet 27 of which is formed a flange 29. The flange 29 forms a shield which has edges or tongues 31 on the sides, and a lower edge or tongue 33. These edges slidably cooperate with the groove 21. By means of the shield effect of the flange 29, the opening 19 is closed, when the edges 31 are slipped into the groove 21.

The upper entry of the elbow 25 is made as a short sleeve 35, around which is a flange 37 having lateral portions 39. The lateral portions 39 have downward fingers 41 which hook over the upper ends of the grooved portions 21. The curved portion 43 fits the front side of the upper portion of the frame 15, as shown in Fig. 3. Portions 39 and 43 form a horizontal flange to

seal the top of the connection. The other sides are sealed by the tongues and grooves.

5 The purpose of the upper sleeve 35 is to support a length of stove pipe 45 which reaches upwardly parallel to the front of the stove, and upon the upper end of which is the controllable draft inlet 11.

10 From the above it will be seen that the assembly of the elbow 25 with the pipe 9 may be lifted up, whereupon the shield 29 may slide from the frame 15. This permits entry into the opening 19 with a shovel or the like for ash removal. The operation of removing parts 25 (with 9) is performed when the stove is cool enough to permit it, or when suitable gloves are used. The present invention permits of such quick removal that the operation may be accomplished with suitable gloves while the stove is hot.

20 The fact that the elbow portion of Fig. 5 is applicable by sliding it down into the grooves in the frame portion 15 is advantageous. This is because the sliding parts are less likely to stick during up and down motion than if they were applied laterally and because there is no force exerted laterally of the motion to cause sticking. No tools are required for removing the elbow 25. Furthermore gravity normally effects closure, and wear and abuse have no deleterious effects upon the ability of the closure to maintain a satisfactory seal against air leakage. Also, all hinges, closure detents and like auxiliaries, such as are

used with hinged door constructions, are avoided. The weight of the elbow and flue are applied to effect seating by movement of translation only.

In view of the above, it will be seen that the several objects of the invention are achieved and other advantageous results attained.

As many changes could be made in carrying out the above constructions without departing from the scope of the invention, it is intended that all matter contained in the above description or shown in the accompanying drawing shall be interpreted as illustrative and not in a limiting sense.

I claim:

15 Apparatus for a stove which has a downward opening for draft inlet and ash-removal and an upright pre-heater flue, comprising means associated with said stove opening providing substantially vertical guides, elbow means supporting said flue and having an opening communicating therewith to receive air from the flue and also having a lateral opening for communication with the stove opening, and shield means on said elbow substantially vertically sliding in said guides and adapted to be applied to said guides and removed therefrom, the shield means moving gravitationally to a seat to substantially seal the opening in the stove, the weight of the elbow and flue being applied to effect seating by movement of translation only.

30 STANLEY F. JACKES.