April 13, 1943. H. R. BLOEMSMA 2,316,392

HEATING STOVE

Filed April 30, 1941

FIG. 1

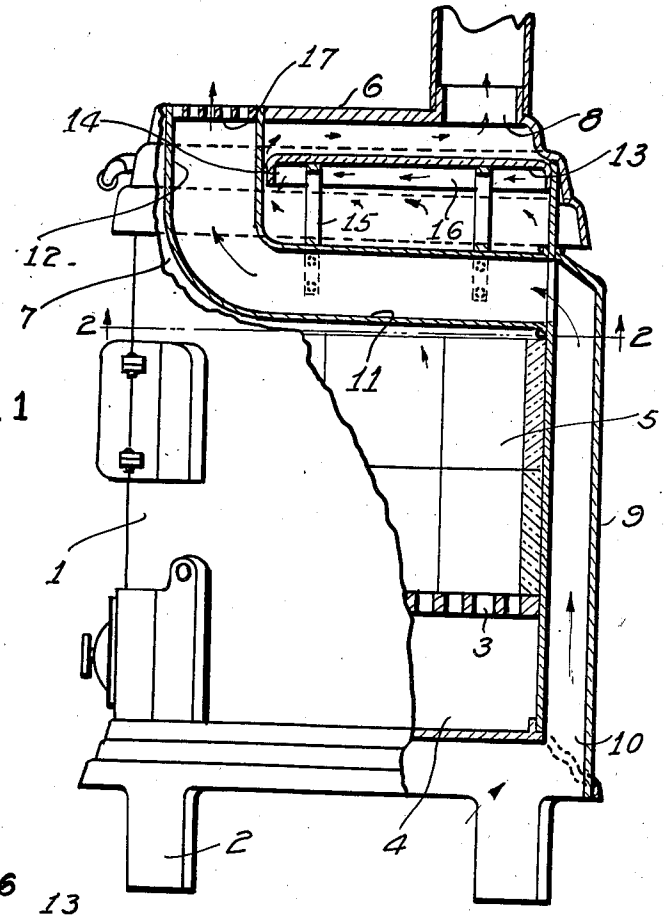
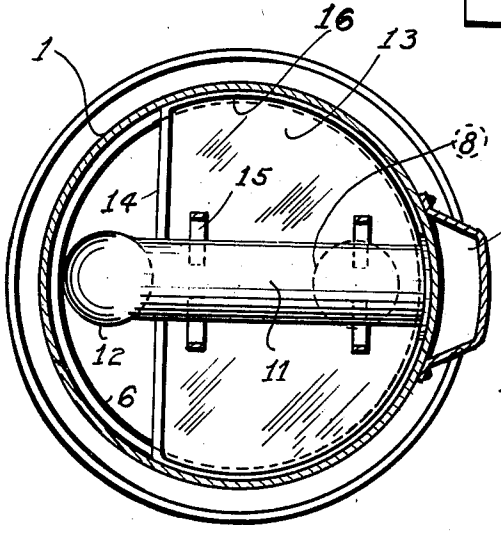


FIG. 2



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HEATING STOVE

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1 Claim. (Cl. 126—70)

This invention relates to improvements in heating devices, such as stoves and furnaces, and has for its principal object to improve the heating qualities of the same without materially adding to the cost of construction of the stove or detracting from its simplicity and ease of operation.

The invention has among its other objects the production of a heating device of the kind described, that will be neat and attractive in appearance, exceedingly simple, sturdy, and which will be otherwise satisfactory and efficient for use wherever deemed applicable.

A further object of my invention is to so construct said stove, that air from without the latter will be entrained from below the firebox and will pass upwardly along the outside of the latter without intermingling with the products of combustion within the stove, and thence pass transversely and upwardly through the stove at a point substantially farthest from the flue outlet from the latter.

An added object of the invention is to so combine a baffle plate with said fresh air conduit, that the latter will support the former, and wherein the plate shall be in sealing engagement with the sides and rear of the dome chamber of the stove, but spaced from the front portion of the latter, whereby the gases flowing toward the flue will be compelled to travel through the space between the front of the baffle and the front of the stove, this lengthening of travel enabling a more efficient burning of the gases of combustion before discharge through the stack.

Many other objects and advantages of the construction herein shown and described, will be obvious to those skilled in the art to which this invention appertains, as will be apparent from the disclosures herein given.

To this end, my invention consists in the novel construction, arrangement and combination of parts herein shown and set forth, and the uses mentioned, as will be more clearly pointed out in the claim hereunto appended.

In the drawing, wherein like reference characters indicate like or corresponding parts throughout the views,

Figure 1 is a vertical elevation of a stove embodying my invention, with certain of the parts broken away and in cross-section; and

Figure 2 is a transverse cross-sectional view taken substantially along the line 2—2 of Figure 1.

Referring more particularly to the drawing, wherein I have illustrated one embodiment of my invention, there is shown a heating device, such as the stove of the type shown, wherein there is an enclosing or outer shell or casing 1 supported on a stand or legs 2. A grate 3 is interposed transversely of the shell interior somewhere adjacent the bottom to provide the ash chamber 4 therebelow, and the firebox or combustion chamber 5 thereabove. Between the top wall 6 of the stove, and the upper region of the combustion chamber is situated the dome or dome chamber 7, in which the gases of combustion intermingle to more completely burn the heating medium (coal in this instance), before passing upwardly of the flue opening 8. This flue opening is preferably arranged closely adjacent the rim of the top wall 6 of the dome, and in the drawing is shown as being substantially at the rear of the latter.

In order to further increase the heating and circulating of air in the room, in which the heater is to be situated, I have arranged a conduit to act in conjunction and cooperation with the combustion chamber, but not to be in direct communication with the gases in the latter, and to this end, I have secured an upright conduit portion 9 to the exterior of the rear of the shell, this conduit having an intake end 10 opening into the room below the grate and into which the cooler air from adjacent the floor is entrained. The conduit then empties into a substantially horizontally extending portion 11 just above the fuel that is to be burned in the combustion chamber, and then projects upwardly at 12 through the top wall 6 of the dome at a point substantially farthest from the flue opening 8; the discharge outlet 17 of the cold air conduit thereby being placed substantially diametrically of the flue opening 8, at the rim of the top wall of the dome.

Obviously, any air passing through the conduit will be heated by the burning fuel and be discharged as clean, heated air, into the surrounding room area. It is also to be noted at this point, that the conduit is larger in opening cross-section adjacent the discharge end than at the intake end, to better enable the expanded, heated gases to flow without interference through the conduit.

To prevent any unburned gases from passing out the flue, I have placed a baffle plate in the dome chamber, this plate 13 extending in a substantially horizontal plane across the latter, with its bounding side and rear edges snugly engaging the interior wall of the dome to seal against free passage of gases upwardly therepast, and with the front edge 14 terminating adjacent the verti-

cal portion 12 of the cold air conduit to provide a relatively large space between this front edge of the baffle plate and the front portion of the stove. The bounding edges 14 of the plate are downwardly flanged to slow up passage of the gases therepast, as well as for strength and installation ease.

The baffle plate is mounted on the cold air conduit and is spaced thereabove by the supporting legs 15 which engage the said elements detachably or are fixed to them, as desired.

The longer arrows indicate the path of flow of the cold air through the conduit, becoming heated therein and discharging in to the room to be heated, while the shorter arrows indicate the path of flow of the heated gases arising from the combustion chamber, these gases striking against the underside of the baffle plate and thence travelling therealong toward the front of the stove, arising through the space between the front edge of the plate and the front of the stove, and thence reversely traveling rearwardly along the top side of the plate and passing upwardly and outwardly through the flue.

Having thus described my invention, it is obvious that various immaterial modifications may be made in the same without departing from the spirit of my invention; hence I do not wish to be understood as limiting myself to the exact form, arrangement, construction and combination of parts herein shown and described, except as limited by the state of the art to which this invention appeartains, and the claim hereunto appended.

What I claim as new and desire to secure by Letters Patent is:

In a stove having a grate, a firebox with a dome chamber thereabove, and a smoke flue leading from closely adjacent the rim of the latter; a cold air conduit having its intake without the stove below said grate and then passing substantially horizontally through the dome chamber and thence passing vertically through the top of the latter adjacent the front of the stove at a point diametrically opposed to the flue opening and farthermost from the latter; and a baffle plate mounted in said dome chamber horizontally and spaced intermediate the top of the dome and the horizontal portion of said conduit, the front edge of said plate extending to the opposed last-mentioned vertical portion of said conduit, the rear edges of said plate being in sealing engagement with the sides of said dome chamber to prevent passage of gases therebetween and to restrict all gas passage from the firebox so that it is directed forwardly onto said conduit from beneath said plate and thence rearwardly above said plate toward the flue.

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