Feb. 17, 1931. R. FUTRAL 1,792,487

STOVE

Filed Jan. 19, 1927

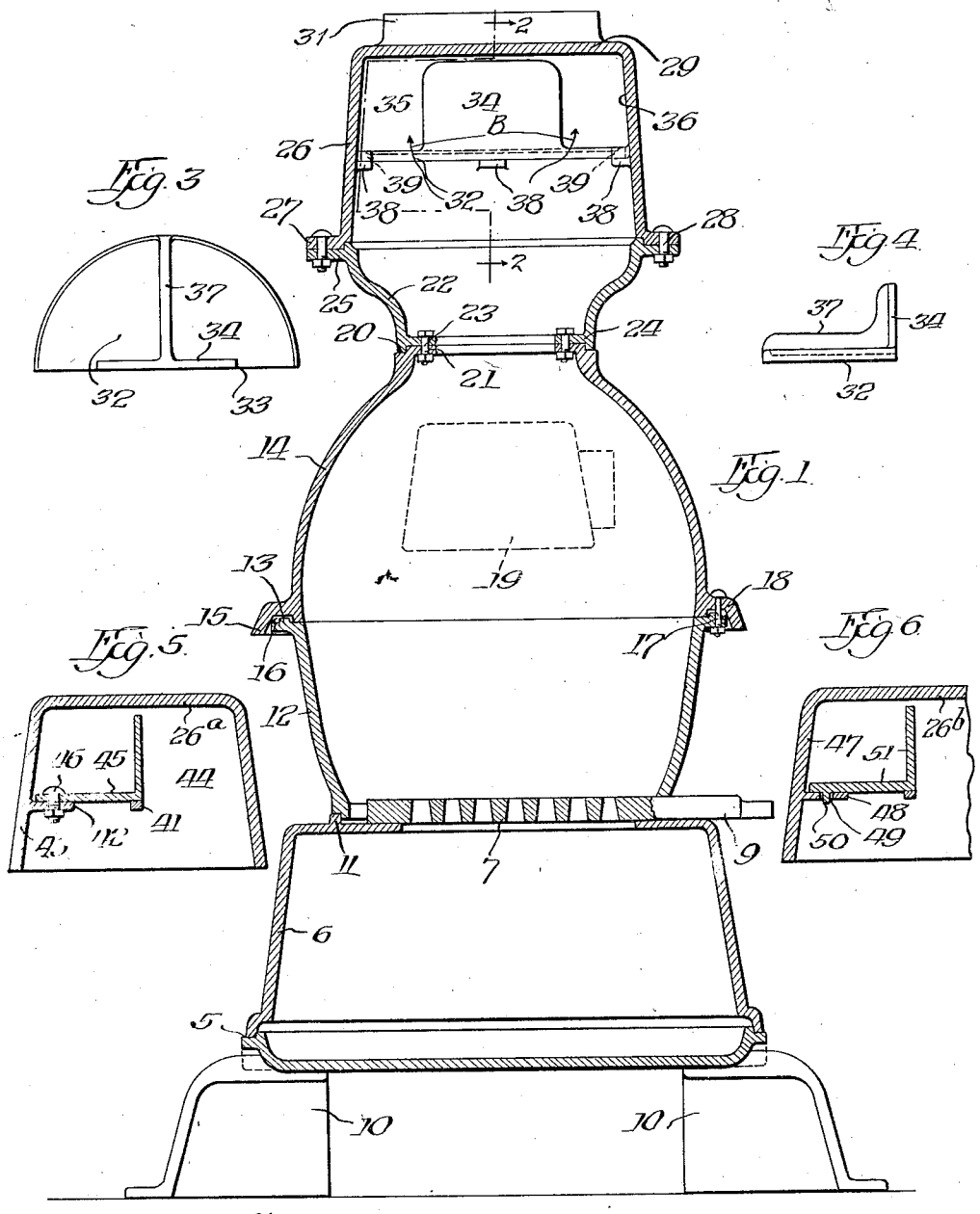


Fig. 1.

Fig. 3

Fig. 4

Fig. 5.

Fig. 6

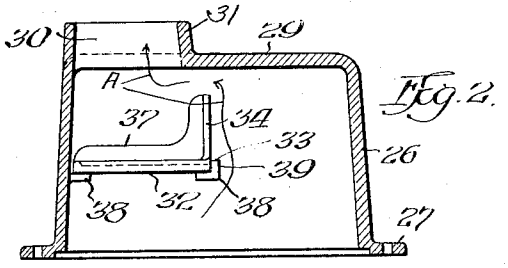


Fig. 2.

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UNITED STATES PATENT OFFICE

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STOVE

Application filed January 19, 1927. Serial No. 162,004.

This invention relates in general to heating devices and, in particular, pertains to an improved stove construction and means for causing a greater area of the stove drum to be brought into contact with the flame, that is to cause the flame to spread and thus increase the heat radiation.

While the invention is shown as applied to a particular type of stove, it will be readily understood that it is useful in other types of stoves than that shown and finds a wide field of utility.

The principal objects and advantages of the present invention reside in the provision of an improved stove construction incorporating therein an improved means for increasing the heat radiation from the stove; the provision of an improved means for deflecting the flame in a stove to contact with a greater area of the stove body and thus increase heat radiation; the provision of an improved stove incorporating therein an improved heat deflecting means; the provision of an improved stove incorporating therein an improved flame baffle; the provision of an improved stove including an improved flame baffle for retarding the discharge of the products of combustion and thereby increasing the heat radiation of the stove.

This invention further includes an improved head for application to various types of stoves, including an improved baffle means in said head for increasing the radiation of heat from the stove.

The foregoing and such other objects and advantages as may appear or be pointed out as this description proceeds are attained in the structural embodiment of the invention shown in the accompanying drawing, in which

Figure 1 is a fragmentary, vertical, sectional view of a stove construction incorporating the present invention;

Figure 2 is a fragmentary, vertical, sectional view taken on the line 2—2 of Figure 1 looking in the direction indicated by the arrows;

Figure 3 is a plan view of a detail and

Figure 4 is a side elevational view of the same.

Figures 5 and 6 are sectional views of alternative forms of this invention.

Referring now more particularly to the drawing, a stove is shown including separable parts such as the base portion 5 forming the ash receiver and supporting a grate-carrying 6 in which a grate 7 is mounted for rotation by means of an integral bar 9 which extends out of the stove to receive a crank not shown. The base 5 is suitably mounted on feet 10, 10.

The base 6 is provided with a suitable annular flange 11, and a lower fire bowl 12 seats on said base and is engaged around said flange 11. Suitable securing means, not shown, may be provided for fixedly attaching the lower fire bowl to the base 6. The lower fire bowl 12 is generally flaring in shape and is provided with an annular upper flange 13.

An upper fire bowl 14 is provided with an outer annular flange 15 which encompasses an annular groove 16 for receiving the upper end of the lower fire bowl 12, the upper bowl resting upon the lower bowl and being attached thereto in any desired manner such, for instance, as by the provision of bolts 17 which pass through complemental openings formed in the flange 13 and horizontal portion 18 of the flange 15. The upper fire bowl is provided with an opening 19 through which fuel may be introduced into the stove.

It will be appreciated that, if desired, a cylindrical fire drum may be interposed between the upper and lower fire bowls for increasing the size and capacity of the stove where desired and that, of course, in this event the fuel opening will be placed in the cylindrical body portion.

The upper fire bowl is substantially hemispherical in contour and provided with an annular groove forming a shoulder 20 and also provided with a plurality of apertured lugs 21 extending inwardly. This serves as a means for attachment thereto of the riser 22 generally flaring in shape, by the provision of bolts or the like, 23, passing through a flange 24 on said riser and through said apertured lugs 21.

The riser 22 is provided with an external annular flange 25 on which a heat drum 26 is mounted, said heat drum having a comple-

mental flange 27, said flanges 25 and 27 being apertured to receive retaining bolts 28. The drum 26 is preferably substantially cylindrical, though slightly tapering inwardly, and is provided with a top wall 29 in which is formed a flue outlet or connection 30, preferably to the rear thereof. A conventional stove pipe is connected to the flange 31 bordering said outlet 30.

The deflecting device of my invention is mounted in the drum 26 and preferably includes a semi-circular plate or baffle 32 formed along the straight edge 33 thereof with a vertical wall or baffle 34, the latter terminating short of the periphery of the plate 32 to afford passageways 35 and 36. The plate 32 and the wall 34 are reinforced by an integral web 37 extending along the wall 32 and up along the wall 34. A plurality of lugs 38, 38 are provided on the inner surface of the cylindrical wall of the drum 26 and serve to support the baffle member, diametrically opposite lugs being formed with upturned extensions 39 which prevent lateral displacement of the baffle member 32.

It will be observed that the flame passes up through the lower fire bowl and upper fire bowl, enters the riser 22 and, instead of passing immediately up the chimney, is caused to be deflected in the direction indicated by the arrows A in Figure 2 and also in the direction indicated by the arrows B in Figure 1 so that the flame is divided and retarded in its passage from the stove. At the same time any unconsumed gases or other products of combustion are retarded, and a complete combustion takes place. The flame passing through the passageways 35 and 36 is divided and thus this division of the draft causes the flame to pass along the inner surfaces of the walls of the upper and lower fire bowls, thus increasing the heat radiated from the stove. This not only increases the efficiency of the stove, causing all of the fuel to be completely utilized because practically all of the volatile matter and carbon is consumed, but at the same time helps to heat the top wall 29 of the drum 26 sufficiently to act as a plate on which water may be boiled or food cooked.

The arrangement of the baffle prevents the formation of soot and thereby renders the stove more safe in operation and, by actual test, I have found that the stove thus equipped with my invention furnished more heat and consumes less fuel than any prior device of the same character known to me.

Referring now more particularly to Figures 5 and 6, the drum 26*a* is provided, as at Figure 5, with lugs 41 and 42, the lug 42 being mounted on the wall 43 and the lug 41 being mounted on the wall 44, there being a similar lug on the opposite wall to that indicated at 44. The baffle member 45 is similar in construction to that shown in Figures 3 and 4, but is secured in position by the provision of a bolt 46 which passes through the lug 42.

In Figure 6 the drum 26*b* is provided, on one wall 47 thereof, with an integral lug 48 apertured at 49 to receive an integral projection 50 formed on the baffle member 51. A detailed description of the function of the forms of the device shown in Figures 5 and 6 is not believed to be necessary, as the advantages appear to be obvious to one skilled in the art.

Having thus described my invention, and illustrated its use, what I claim as new and desire to secure by Letters Patent is:

In combination, a stove having a heat drum at the top thereof, said heat drum having communication with the fire bowl of the stove and provided with a chimney outlet displaced in the top thereof to one side of the center of said drum, said drum including a tapered peripheral side wall so that the drum is larger at the bottom than at the middle and upper portions thereof, a plurality of supporting lugs on the inner surface of the tapered wall of said drum substantially midway between the top and bottom thereof, a semi-circular baffle plate removably supported on said lugs and having a curved margin abutting the tapered wall of said drum and disposed halfway across said drum below said chimney outlet, means for preventing lateral displacement of the baffle member, said baffle plate having a vertical extension along the straight margin thereof terminating short of the tapered wall of the drum to afford flue passageways, the horizontal portion of said baffle plate fitting said drum only at the portion adjacent to said lugs and resting thereon, said tapered portion of said drum permitting canting of the baffle member on said lugs for facilitating removal of the baffle member through the larger end of said drum.

In testimony whereof, I have hereunto signed my name.

RICHARD FUTRAL.