Feb. 12, 1946. S. B. RYMER 2,394,811

STOVE

Filed Jan. 27, 1945 2 Sheets-Sheet 1

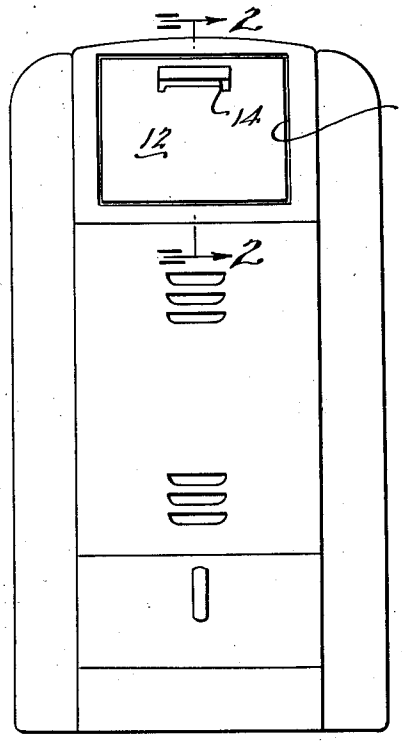



Fig. 1.

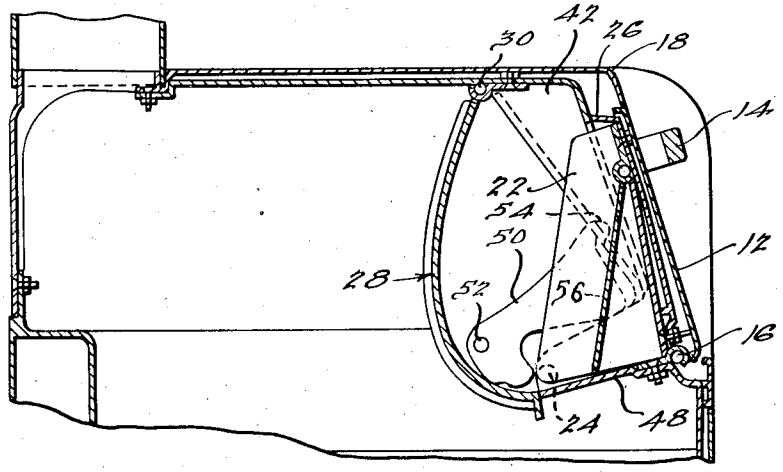



Fig. 2.

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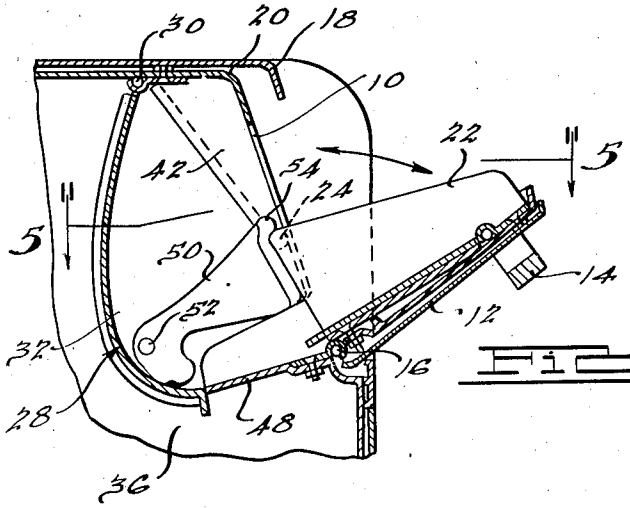



Fig. 3.

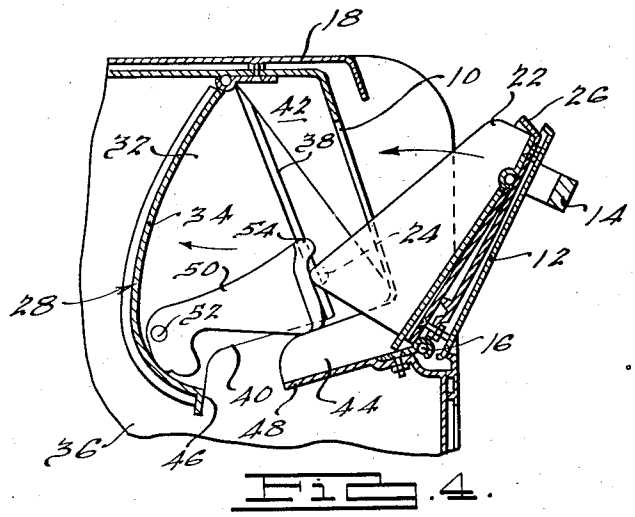



Fig. 4.

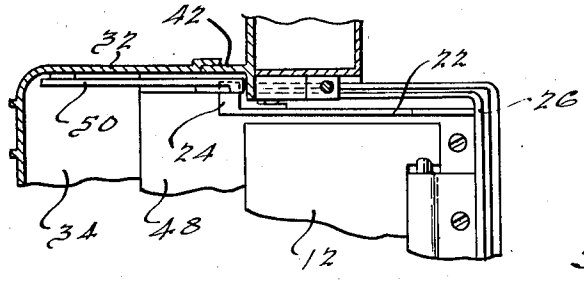



Fig. 5.

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Patented Feb. 12, 1946 2,394,811

# UNITED STATES PATENT OFFICE

2,394,811

## STOVE

S. Bradford Rymer, Cleveland, Tenn., assignor to Dixie Foundry Company, Inc., Cleveland, Tenn., a corporation of Delaware

Application January 27, 1945, Serial No. 574,897

1 Claim. (Cl. 126—190)

This invention relates to stoves adapted for burning hard fuel and has particular reference to a novel and efficient manner of introducing fuel into the combustion chamber in such a way as to eliminate substantially the escape of smoke and fumes from the combustion chamber into the space in which the stove is arranged at such time.

A principal object of the invention, therefore, is to provide in a stove adapted for burning hard fuel a means for introducing fuel into the combustion chamber in such a manner so as to substantially prevent the escape of fumes and smoke from the combustion chamber through the fuel feed door opening.

Other and further objects of the invention will be apparent from the following description and claim and will be understood by reference to the accompanying drawings, of which there are two sheets, which, by way of illustration, show a preferred embodiment and the principles thereof and what I now consider to be the best mode in which I have contemplated applying those principles. Other embodiments of the invention embodying the same or equivalent principles may be used and structural changes may be made as desired by those skilled in the art without departing from the present invention and the purview of the appended claim.

In the drawings:

Fig. 1 is a front elevational view of a stove embodying my invention;

Fig. 2 is a fragmentary sectional view taken in a plane along the line 2—2 of Fig. 1, looking in the direction of the arrows;

Fig. 3 is a view similar to Fig. 2 but with the fuel feed door in open position;

Fig. 4 is a view similar to Fig. 3 but showing the position of the fuel feed door and closure during closing movement; and

Fig. 5 is a fragmentary horizontal sectional view taken in a plane along the line 5—5 of Fig. 3, looking in the direction of the arrows.

In Fig. 1 a stove embodying my invention is illustrated. This comprises a stove adapted for burning hard fuel and includes an opening 10 adjacent the upper end thereof and a pivoted door 12 provided with an operating handle 14. The door 12 may be made of any suitable construction and is hinged for movement between the position illustrated in Fig. 2 and that illustrated in Fig. 3 on a pivot 16. The opening 10 comprises aligned openings in the outer and inner panels 18 and 20 of the stove body or cabinet. Each side of the door 12 is provided with an inwardly extending flange 22, each of which is provided with a laterally extending lug 24 which cooperates with the edge of the opening 10 in the panel 20 for limiting the outward opening movement of the door 12. The door 12 at its top and sides is provided with an inwardly extending flange 26 which abuts the outer surface of the wall 20 around the opening 10 when the door is closed so as to effectively seal the opening 10 through the panel or wall 20.

A closure member 28 in the form of a receptacle presented toward the opening 10 is hinged inside the stove on the pivot 30 for movement between the positions illustrated in Figs. 3 and 4. This member 28 includes spaced walls 32 connected by curved wall 34. The member 28 thus is open toward the opening 10 as well as downwardly. This member 28 is pivoted in the upper part of the combustion chamber 36.

The front and bottom edges 38 and 40 of the walls 32 cooperate with flanges 42 and 44 and the free edge 46 of the member 28 cooperates with the flange or chute 48 to form a closure for the opening 10 interiorly of the combustion chamber 36. The flanges 44 and 48 form a chute which extends inwardly and downwardly from the opening 10 and the panel 20 and cooperates with the member 28 when arranged as illustrated in Fig. 3 to prevent the escape of smoke and fumes from the combustion chamber 36 through the opening 10 when the door 12 is open.

Each of the side walls 32 of the member 28 is provided with a pivoted dog 50 in the form of a bellcrank pivoted at 52. With the door 12 in its closed position, as illustrated in Fig. 2, the lugs 24 on the sides 22 of the door 12 are positioned below the dogs 50 and during opening movement of the door the dogs are free to swing in a counterclockwise direction about their pivot 52, thereby permitting free opening movement of the door without any corresponding movement of the closure 28.

When the door arrives at its open position, as illustrated in Fig. 3, the lugs 24 will have moved to such an extent so as to permit the dogs 50 to assume the position illustrated in Fig. 3. In this position an ear 54 of each of the dogs cooperates with a lug 24 so as to maintain the dog 50 in the position.

Upon closing movement of the door, the lugs 24 reacting on the ends of the dogs 50 in the manner as illustrated in Fig. 4, will cause the closure 28 to swing in a clockwise direction so as to permit the lugs 24 to clear the ends of the dogs 50 and return to their position as illustrated in Fig. 2.

The other ends of the dogs are formed to engage the wall 34 so as to limit their clockwise rotation.

As soon as each of the lugs 24 has moved through an arc sufficient to clear the end of the dog against which it is bearing, as illustrated in Fig. 4, the closure member 28 will swing back to its position as illustrated in Fig. 2, the mass of the closure 28 and its side walls and the center of gravity being so related to the pivot 30 that the closure 28 normally assumes the position illustrated in Figs. 2 and 3.

It will thus be observed that when the door 12 is opened, the closure 28 prevents the escape of smoke and fumes from the combustion chamber into the room. When the door 12 is open, the door 12, chute 48, and closure member 28 form a hopper adapted to receive fuel. During the closing movement of the door 12, as illustrated in Fig. 4, the fuel in the hopper provided by the door 12, the chute 48 and the closure 28 will be automatically discharged into the combustion chamber 36 through the gap created by the inward movement of the closure member 28. While the combustion chamber 36 is open to the room at this time, the time interval is very small and the fuel feeding into the combustion chamber 36 from the hopper, as previously described, will tend to eliminate any flow of smoke or fumes from the combustion chamber 36 into the room.

The inside of the outer door or closure 12 is provided with a pivoted member 56 which functions as a pusher upon closing movement of the door 12 for dislodging fuel from the chute 48 and pushing such fuel into the combustion chamber.

While I have illustrated and described a preferred embodiment of my invention, it is understood that this is capable of modification and I therefore do not wish to be limited to the precise details set forth but desire to avail myself of such changes and alterations as fall within the purview of the following claim.

I claim:

In a stove having a combustion chamber and a fuel feed opening thereto, a movable outer closure pivoted to said stove and adapted in one position thereof for closing said opening, a chute projecting inwardly from said opening, said closure in its open position cooperating with said chute so as to accommodate a charge of fuel, a movable inner closure pivoted to said stove adjacent said opening and cooperable with said chute for automatically closing said opening on the inside thereof, said outer closure having lugs on the inner side thereof, dogs pivoted to said inner closure and arranged at the sides thereof and in the path of movement of said lugs during movement of said outer closure from open to closed position whereby upon closing movement of said outer closure said lugs will engage said dogs and thereby move said inner closure to its open position, said closures and the lugs and dogs carried thereby being constructed and arranged so that after the inner closure has been opened said lugs will disengage themselves from said dogs whereby to permit said inner closure to close and be closed when said outer closure has completed its closing movement, the pivotal connection of said dogs on said inner closure permitting said lugs to temporarily displace said dogs upon opening movement of said outer closure without a corresponding movement of said inner closure.

S. BRADFORD RYMER.