S. H. FREDERICK.

STOVE ATTACHMENT.

APPLICATION FILED JAN. 3, 1920.

1,346,883. Patented July 20, 1920.

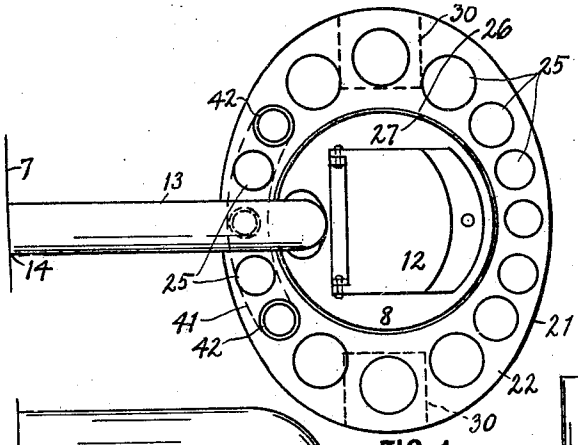


FIG. 1.

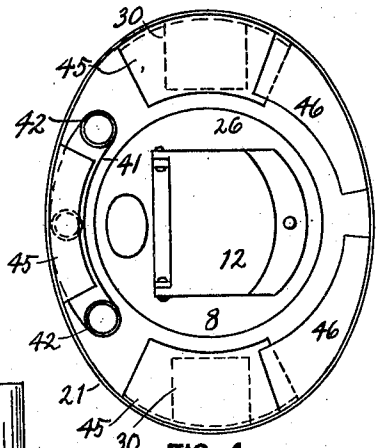
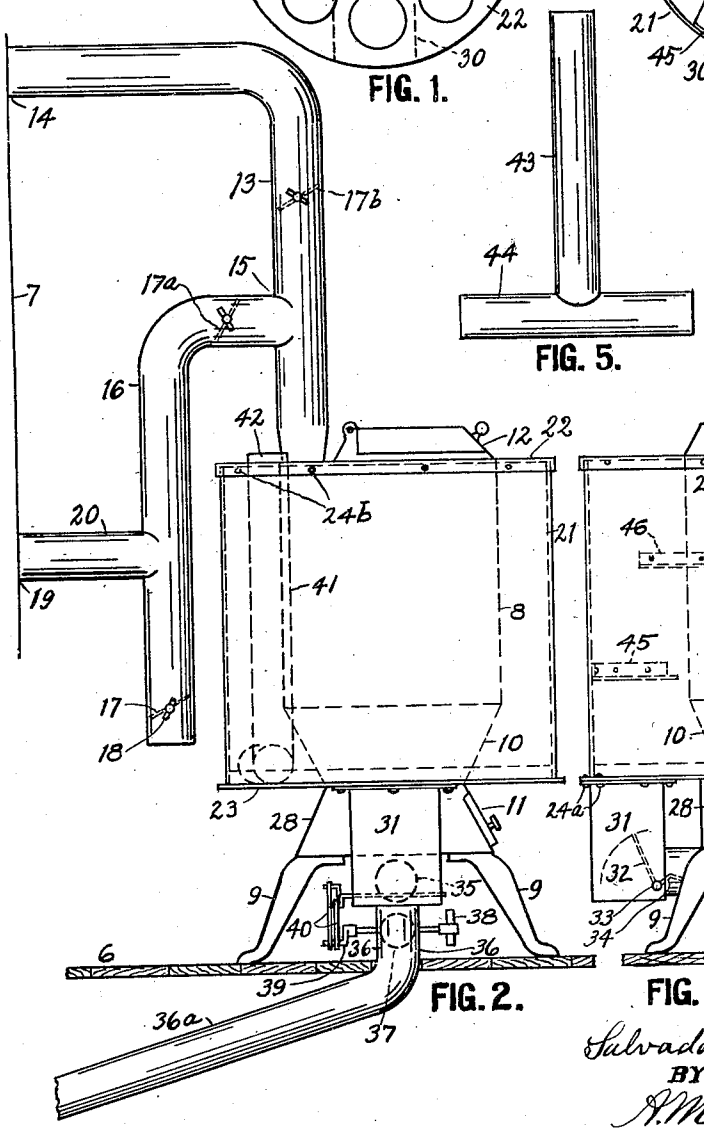


FIG. 4.



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STOVE ATTACHMENT.

1,346,883. Specification of Letters Patent. Patented July 20, 1920.

Application filed January 3, 1920. Serial No. 349,327.

To all whom it may concern:

Be it known that I, SALVADOR H. FREDERICK, a citizen of the United States, residing at St. Paul, in the county of Ramsey and State of Minnesota, have invented a new and useful Stove Attachment, of which the following is a specification.

This invention relates to heating stoves, and the object is to provide a heating stove with efficient means for circulating the air in a room so as to reheat it, and also to let some of the air pass out of the room and fresh air enter it, and get heated before it spreads in the room. Another object is to provide a stove with efficient means for humidifying the air in the room or rooms warmed by the stove.

In the accompanying drawing:

Figure 1 is a top plan view of a stove provided with my invention. Fig. 2 is a side elevation of Fig. 1. Fig. 3 is a partly sectional front elevation looking as from right to left in Fig. 2, with most of the stove pipe omitted. Fig. 4 is a top view of the stove and its heating jacket with the top of the latter removed. Fig. 5 is a front elevation of the humidifier in a modified form.

Referring to the drawing by reference numerals, 6, designates the floor and 7 a wall of a room in which a common heating stove 8 is mounted on legs 9. Said stove is preferably of the plain cylindrical type shown, having a fire-pot 10, an ash-door 11 and an upper cover or lid 12 over the opening through which the fuel is placed in the stove. From the top of the stove extends a stove-pipe 13, which at 14 enters into a chimney concealed in the wall 7. Into the pipe 13 joins at 15 another pipe 16, whose lower end is suspended from the floor and is open and provided with a damper 17 having a handle 18. A suitable distance up from the floor to register with a fireplace (not shown), the pipe 16 is provided with a horizontal branch pipe 20, adapted to be inserted at 19 into the usual stove pipe hole in the closing plate (not shown) of the fire place. Such plate is extensively used in houses where a cooking stove is often placed in front of the fire-place and serves both for heating and for cooking.

This type of stove usually gets red hot when coal is used for fuel, and it is a problem how to get the benefit of that strong heat by properly distributing and utilizing it. Said problem I solve by the following means: I incase the stove in an oval jacket, whose body 21 may be of sheet iron while the top 22 and bottom 23 may be of either sheet iron or cast iron and secured to the body by screws 24 and 24^b.

The top 22 is provided with a series of apertures 25 for the upward escape of the hot air, and in the middle is a large aperture 26, whose edge 27 fits upon the top of the stove. The bottom 23 is also provided with a central aperture of a size to fit about the stove between its fire pot portion and its base 28, as best shown at 29 in Fig. 3. Each end of the bottom is provided with an aperture 30, from which extends downwardly a tube 31 secured by screws 24^a and having a leaf valve 32, fixed on a rock shaft 33, having a rocker arm 34. The tubes or boxes 31 are connected by a horizontal pipe 35, which forms the head or arms of a T-pipe, whose leg 36 extends downward through the floor 6 and at a slant as 36^a down to a lower point where it communicates with the atmosphere outside the building.

In the leg 36 is inserted a double winged valve or damper 37, whose shaft has at one end a handle 38 and at the other end a crank 39. The crank 39 is connected by two rods 40 to the rocker arms 34, so that the valves 32 are turned open to the extent the valve 37 is closed, and vice versa.

In the rear portion of the jacket is placed upon the bottom a U-shaped pipe 41, whose open ends 42 project slightly upward through two of the apertures in the cover 22. This tube is to contain water, the vapor of which humidifies the air in the room. In Fig. 5 is shown that said humidifier may have but a single upright tube 43 projecting upward from a horizontal tube 44, whose ends, are, of course, closed and only the top end of tube 43 is open.

In the jacket 21 are fixed baffle plates 45, spaced directly above the air ports 30, and spaced also some distance from the sides of the stove. Fixed higher up and in alternate or zig-zag relation to the first mentioned baffle plates are other baffle plates 46.

In the operation, when the stove is hot, cold air from the floor may be admitted upward through the tubes 31, and after being heated in the jacket passes out through the apertures 25, thus heating the air in the room. To the extent it is desired to get

fresh air into the room the valve 37 is opened and the valves 32 closed. The foul air is gradually used up as draft air enters into the fire in the usual manner and some of it may also be allowed to escape into the chimney through the pipe 20 by opening the valve 17. If the draft through the fire is too strong, valves 17 and 17[a] may both be opened. And if this draws too much warm air out of the room, a damper 17[b] may be used to regulate the draft up through pipe 13.

The baffle plates serve to retard the air till it gets properly heated. The use of the humidifier is already understood, so I need not further describe it.

The invention may be considered as an attachment to the stove although it may well be built together with the stove if provided before the stove is completed. In either case it will be well to apply it as follows: Put the pipe 35, 36, 36[a] with the tubes 31 in place in the room; put the base and legs of the stove in position; place the bottom 23 upon the base and secure the tubes 31 to it by the screws 24[a]; put the stove upon the base; put in the humidifier; put the jacket 21 in place and secure it by screws 24; put the cover 22 upon it and secure it by screws 24[b]. The piping 13, 16, 20 is then put in place, water poured into the humidifier, and everything is ready for making a fire in the stove.

What I claim is:

1. The combination with a heating stove, of a jacket spaced about the stove and having a perforated top, and a bottom fitting about the stove close by the base thereof, said bottom having two apertures each with a tube depending below it outside the base of the stove and provided each with a valve, a T-shaped pipe having its arms connected one with each of said tubes and its leg extended down through the floor and arranged to receive fresh air, a valve in said leg above the floor, and operative connection between said valve and the valves in the tubes, whereby the latter valves will close or open automatically in reverse order to the closing and opening of the valve in the leg.

2. The structure specified in claim 1, in which the jacket is of oval form and the said tubes are depending from the parts of its bottom thereby projected beyond the base of the stove.

3. The structure specified in claim 2, in which the air pipe formed of the leg of the T extends at an incline downwardly with its intake end.

4. The structure specified in claim 2, in which the top and bottom of the jacket are detachable from the body of the jacket, and the stove is detachable from its base.

5. The structure specified in claim 1, in which a main stove pipe extends from the top of the stove and is adapted to connect with a chimney, said stove pipe having a lateral branch extending downwardly and provided in its lower and suspended end with a valve and above said valve with a horizontal arm adapted to connect with a lower hole leading into the chimney.

6. The structure specified in claim 5 and a valve or damper in the main stove pipe above said branch.

7. The structure specified in claim 6, and a valve in the branch pipe intermediate the main pipe and the arm leading to the fire place.

8. The structure specified in claim 1 and baffle plates arranged upon the inner side of the jacket and spaced partly away from the stove.

9. The structure specified in claim 8, said baffle plates being arranged in zig-zag order and some of them higher up than others.

In testimony whereof I affix my signature.

SALVADOR H. FREDERICK.