Feb. 24, 1925. 1,527,732

H. F. GROSS

HOT AIR CIRCULATOR FOR HEATING STOVES

Filed July 2, 1924

FIG. 1.

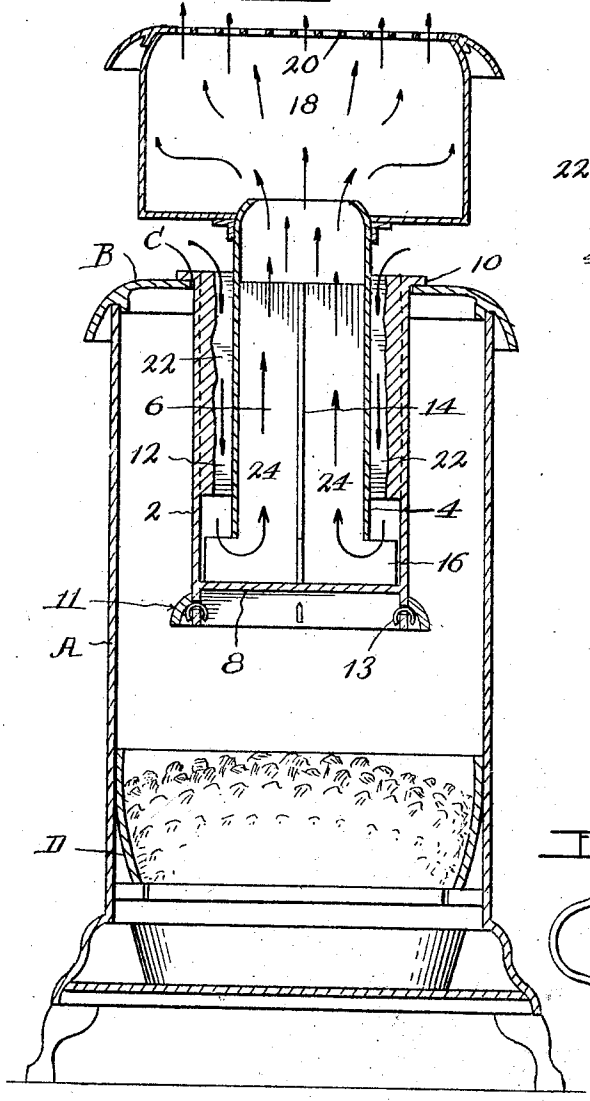
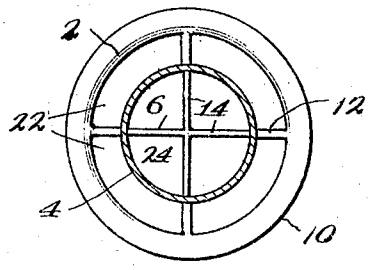


FIG. 2.



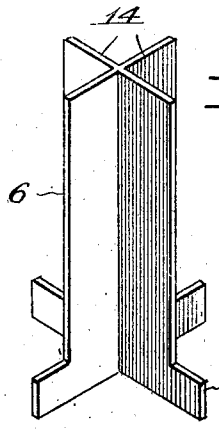


FIG. 3.

FIG. 4.



FIG. 5.

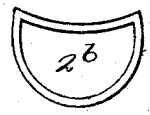
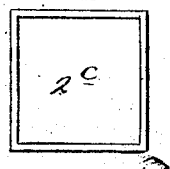


FIG. 6.



Inventor:
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UNITED STATES PATENT OFFICE.

HENRY F. GROSS, OF BUNKER HILL, KANSAS, ASSIGNOR OF ONE-FOURTH TO A. L. KENNECOTT, OF BUNKER HILL, KANSAS.

HOT-AIR CIRCULATOR FOR HEATING STOVES.

Application filed July 2, 1924. Serial No. 723,711.

To all whom it may concern:

Be it known that I, HENRY F. GROSS, a citizen of the United States, residing at Bunker Hill, in the county of Russell and State of Kansas, have invented certain new and useful Improvements in Hot-Air Circulators for Heating Stoves, of which the following is a specification.

My invention relates to hot air circulators for stoves and furnaces and my object is to provide a simple and inexpensive apparatus of this character which can be readily installed in stoves and furnaces for the purpose of obtaining and circulating a maximum volume of heated air at a minimum expenditure of fuel.

In order that the invention may be fully understood, reference will now be had to the accompanying drawing, in which:

Fig. 1 is a vertical sectional view of a heating stove equipped with the air circulator.

Fig. 2 is a detail plan view of the hot air circulator.

Fig. 3 is a detail perspective view of a partition constituting a portion of the invention.

Figs. 4, 5 and 6 are plan views of modified forms of a drum constituting a portion of the invention.

Similar reference characters designate like parts throughout the drawing.

A, designates a heating stove of any ordinary or preferred type, the top B of which has a centrally disposed opening C formed therein to admit the hot air circulator, which embodies a drum 2, an internal tube 4 and a partition 6.

The drum 2 has a closed bottom portion 8 and is provided at its upper open end with a marginal flange 10 which overlaps the top B of the stove A for the purpose of supporting the drum which depends into the stove A throughout the opening C.

The tube 4 is held centrally within the drum 2 by equally spaced vertical fins 12 which are, preferably, formed integral with the interior surface of said drum 2. The drum 2 is provided at its lower portion with a removable collar 11, held in place by wire segments 13. Said collar 11 may be arranged concentrically or eccentrically upon the drum 2, it depending on how said drum is arranged within the stove. In some instances where the stove pipe, not shown, connects with one side of the top B, it may be necessary to arrange the drum 2 eccentrically within the stove A, in which event the collar 11 is formed with an eccentric opening to fit over the lower portion of the drum 2, while its periphery is concentrically disposed within the interior of the stove A. In either case the collar 11 acts as a distributer in causing the heated air to uniformly heat the casing of the stove A, instead of flowing upwardly along one side thereof in its passage to the stove pipe.

The partition 6 consists of a plurality of equally spaced wings 14 provided at their lower ends with lateral extensions 16 upon which the tube 4 rests and is spaced above the bottom 8 of the drum 2, so that the heated air passing downwardly between the drum 2 and said tube 4 may enter the lower end of the latter.

The tube 4 is surmounted by a radiator 18, preferably, provided at its upper end with a grating 20 through which the heated air may escape.

The fins 12 divide the space between the drum 2 and the tube 4 into descending air channels 22 which communicate at their lower ends with ascending air channels 24 formed within the tube 4 by the wings 14.

In practice the heat from the fire in the fire-pot D, in ascending to escape through the usual flue, not shown, impinges against the bottom 8 and the exterior surfaces of the drum 2, thereby heating the relatively large volume of air in the tube 4 and causing it to flow upwardly through the channels 24. The upward flow of air through the tube 4 creates a suction which draws the outer air downwardly through the channels 22 and thence into the channels 24 from which it escapes in a heated state into the radiator 18 and out through the grating 20. The heated air escaping through the grating 20 may, in addition to heating the room containing said radiator, be utilized for heating food or other articles placed upon said grating 20.

If preferred the tube 4 may be made of sufficient length to extend through the floor of an upper room in which the radiator 18 may be located.

In the modified form disclosed by Fig. 4, the drum 2^a is formed to fit within a stove having an elliptical body. The drum 2^b is for a stove having a cylindrical body and

in which the stove pipe connection is at top of the stove, at one side. The drum 2^c is more particularly for a wood burning stove with a horizontal body.

From the foregoing description it will be understood that a large volume of air may be heated and circulated by my apparatus thereby adding to the efficiency and heating capacity of the stove or furnace in which it is installed, and while I have shown the preferred and several modified forms of the invention, I reserve the right to such other forms as fall within the spirit and scope of the invention as claimed.

Having thus described my invention, what I claim and desire to secure by Letters Patent, is:

1. In a hot air circulator, a drum closed at its lower portion and open at its upper end, a tube disposed within and projecting above the upper end of said drum, spacing elements between the drum and the tube for holding the latter centrally within the former, and means dividing said tube into air channels and supporting it above the bottom of the drum.

2. In a hot air circulator, a drum open at its upper end and closed at its lower portion, a tube spaced within and projecting above the upper end of said drum, and a partition having wings dividing the tube into air channels and extensions which support said tube above the bottom of the drum.

3. In a hot air circulator, a drum closed at its lower portion and open at its upper end, a tube disposed within and projecting above the upper end of said drum, spacing elements between the drum and the tube for holding the latter centrally within the former, means spacing said tube above the bottom of the drum so that a column of air descending between said drum and said tube may enter the lower end of the latter and pass upwardly therethrough, and a radiator communicating with the upper end of the tube.

In testimony whereof I affix my signature, in the presence of two witnesses.

HENRY F. GROSS.

Witnesses:
L. J. FISCHER,
F. C. FISCHER.