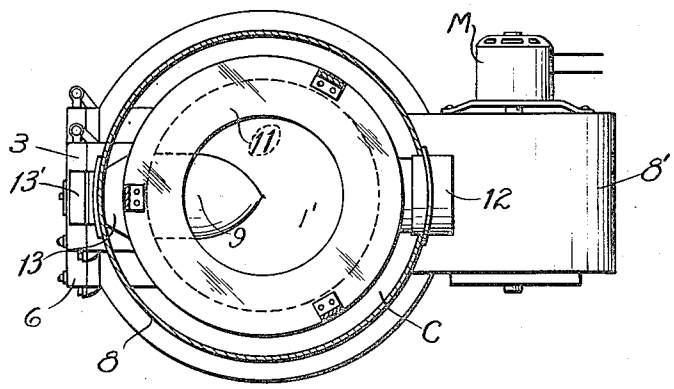
April 15, 1924. 1,490,135

F. A. C. SKINNER

STOVE

Filed Dec. 16, 1922

FIG. 2.



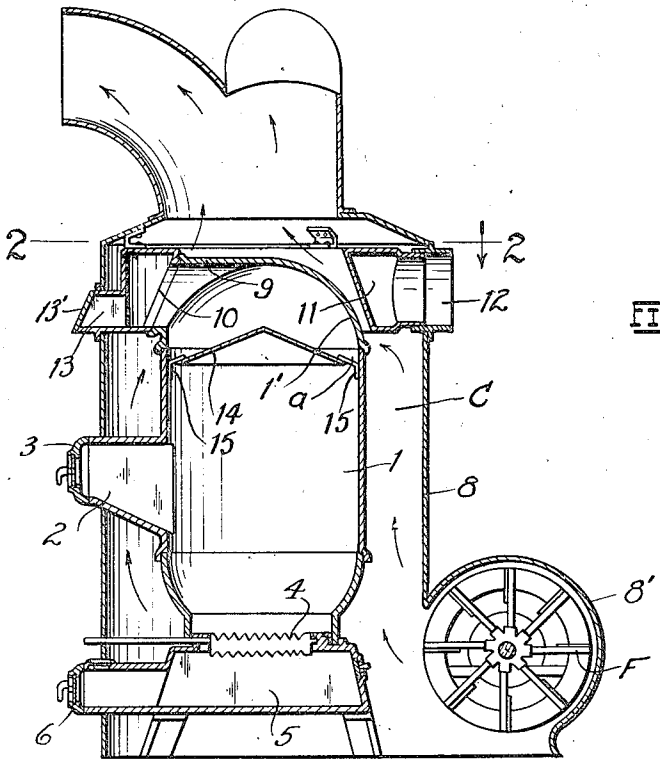


FIG. I.

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Patented Apr. 15, 1924. 1,490,135

UNITED STATES PATENT OFFICE.

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STOVE.

Application filed December 16, 1922. Serial No. 607,330.

To all whom it may concern:

Be it known that I, FRED A. C. SKINNER, a citizen of the United States, residing at St. Louis, State of Missouri, have invented certain new and useful Improvements in Stoves, of which the following is a specification.

The present invention is directed to improvements in air heating stoves, and has for its object to provide a simple construction of stove which will present a maximum heating surface to the air currents traversing the outer casing of the stove and at the same time cause the body of air to take up or absorb the greatest number of heat units from the heating surfaces before the same is discharged from the casing. The improvement herein lies principally in the specific character of the hot air circulating pipe leading to the flue where the waste gases give up most of their heat before discharging. Further advantages will fully appear from the following detailed description in connection with the accompanying drawings, in which—

Figure 1 represents a middle vertical longitudinal section through the stove and outer casing; Fig. 2 is a horizontal cross section on the line 2—2 of Fig. 1 through the outer casing, the stove and air circulating pipe being shown in plan.

Referring to the drawings, 1 represents a conventional form of coal burning stove provided with a feed charging mouth 2 closed by a door 3, a grate 4, and ash compartment 5 with the usual door 6 as well understood in the art. The stove proper is preferably made in sections as shown (Fig. 1) for purposes of hauling and shipping, the end of one section being received by a recess or offset formed in the continguous end of an adjacent section as fully indicated in Fig. 1, whereby an air-tight joint is formed between the sections. The stove is surrounded by an outer casing or jacket 8 which is formed at the bottom in the rear of the stove with an extension or scroll 8′ for the housing of a suitable circulating fan or blower F, the same being directly connected to the shaft of electric motor M mounted on the scroll 8′.

The dome 1′ of the stove has a smoke discharge flue 9, said flue being connected to the intake 10 of a hot-air pipe or annular chamber 11 for the circulation of the products of combustion which discharge through the outlet 12 to the stack (not shown). The chamber 11 is provided with a clean-out 13 just opposite the intake 10, said clean-out 13 being provided with a door 13′ which is normally closed but may be opened to check the stove draft and to provide increased air circulation through the chamber 11. By slightly opening the door 13′ a small complement of air may be admitted to the chamber 11 for the purpose of furthering the combustion of the smoke, or, when necessary, the door 13′ may be opened sufficiently to cause the increased draft to carry the heavier particles of soot, ash, etc., out of said chamber. A further advantage of the chamber 11 is to provide an increased radiation of the heat from the stove and to reduce the products of combustion as much as possible by the air circulating through the casing 8 before they pass out to the stack.

It will be observed that the inner wall of the chamber 11 is inclined inwardly and hugs the dome 1′ as closely as possible without unduly restricting the passage of the air between the dome and said inclined wall. The object of this is to obtain as large a cross-sectional area as possible of the chamber 11 without increasing the diameter or height of the casing 8.

The fuel charging mouth 2 necessarily extends across the hot air chamber C through the casing wall to permit the introduction of the fuel into the fire pot of the stove.

The stove is provided with a conical baffle plate 14 disposed across the combustion chamber of the stove, near the top thereof and just below the dome 1′, said baffle being secured to the stove wall by four brackets 15 so as to leave an annular space *a* between the baffle and said wall. As the hot gases rise in the combustion chamber they will be deflected by said baffle to the walls of the combustion chamber licking said walls and the dome 1′, and imparting their heat thereto for radiation into the hot air chamber C. Thus a greater part of the heat of the combustion gas will be radiated from the stove before leaving the combustion chamber.

The outside air is drawn into the casing by the fan F and then circulates through the casing chamber C as indicated by the arrows in Fig. 1, the air particles becoming thoroughly heated by contact with the walls of the stove, hot air pipe, and the inner walls of the casing. Features shown in the drawings but not alluded to are well understood in the art and require no description in the present connection.

Having described my invention, I claim:

In an air-heating stove, an inner stove, an outer casing spaced therefrom, said inner stove being provided at the top with a dome having a lateral smoke outlet, a deflector within said stove immediately below the dome and spaced from the wall of the stove, and an annular smoke pipe positioned around said dome and having an outlet and an inlet connected with the dome outlet, the inner wall of said smoke pipe being in the shape of a truncated cone with the periphery of the base in close proximity to the bottom of the dome.

In testimony whereof I hereunto affix my signature.

FRED A. C. SKINNER.