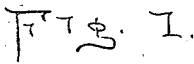


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HEATER.

1,051,072.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, PORTE M. BRADLEY, a citizen of the United States, residing at Little Rock, in the county of Pulaski and State of Arkansas, have invented certain new and useful Improvements in Heaters; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to heaters, and it more particularly relates to an improved heater of the reflector type.

An object of the invention is to provide a heater of this character having a perfect circulation of air, properly distributed around the burner thereof.

A still further object of the invention is to provide air ducts or perforations through the walls of the heater in such relation to the burner and to the heat deflectors with the heater, as to provide, heated air properly distributed within the heater, so that the radiation will be equalized around the heater.

Other objects and advantages may be recited hereinafter and in the claims.

In the accompanying drawings which form a part of this application, Figure 1 is a perspective view of my improved heater, certain portions being broken away, so as to disclose the interior arrangement, and, Fig. 2 is a vertical sectional view through the front and back walls of the heater embodying my improvement.

Referring more particularly to the drawings in which similar reference characters designate corresponding parts throughout the several views, I provide a stove body comprising a metal casing or box consisting of side walls 5, rear wall or back 6, an upper front wall 7, a lower front wall 8 and a top 9. The stove body is provided with ordinary legs 10, whereby an air space is provided thereunder.

The front part of the heater is provided with an opening between the portions 7 and 8, extending approximately entirely across the body of the heater. The heater is also provided with side linings 11 and a corrugated reflector plate 12, preferably of copper or copper-placed sheet metal. The side

linings may be secured to the body by any proper means. The reflector plate is preferably secured to the lower front portion 8, by rivets, bolts or the like 13, being also secured, at its lateral edges, to the rear and lower edges of the side plates 11. Instead of the reflector plate being secured at its top to the rear wall 6, as in ordinary heaters of this character, an air passage 14 is provided therebetween, so that air may pass from the air space under the heater, upward through the air passage 14. To the upper portions of the sides 5 is secured a substantially horizontal deflector plate 15, being slightly inclined upwardly toward the rear wall, and being curved upwardly at its rear portion. A forwardly extending deflector plate 16 is secured to the rear wall, curving forwardly therefrom, over the rear end of the first said deflector plate.

An air passage 17 is provided between the top 9 and the deflector plate 16, an air passage or draft opening 18 being provided between the deflector plates 15 and 16.

A burner pipe 19, is supported by the side walls 5 in the well known manner, lava tips or jets 20 being secured to the burner pipe and constituting a part of the gas burner, said gas burner being adapted to connect with a gas supply, through the medium of a connecting member 21, a valve 22 of ordinary construction being provided for regulating the flow of gas.

The upper front wall 7 extends below the level of the gas burner. When the gas is turned on and lighted, air enters the heater through the open front below the portion 7 and supplies oxygen to aid combustion of the gas. However, if no other source of air supply were provided, the combustion would be incomplete, as this air supply would have the effect of forcing the flame up against the deflector plates 15 and 16, thereby excluding air from the upper portion of the flame, so that a part of the smoke or unconsumed products of combustion would be deposited upon the deflector plate, as soot, the other part of the smoke passing through the air passage 18 and out into the room being heated. This smoking and sooting in heaters, of ordinary construction, is well known to be very objectionable; and in order to overcome this objection, I provide a

series of apertures or perforations 23, through the side walls 5, said apertures being arranged in approximately horizontal series above the level of the burner. I also
 5 provide a substantially horizontal series of perforations 24, extending across the upper front portion 7, above the level of the burner, thereby providing a mitigated flow of air between the burner and the deflector
 10 plate 15. I may also provide a series of perforations 25 through the rear wall 6 and top plate 9, in order to auxiliate the action of the air through the passage 14.

The heater may be provided with a stove
 15 pipe connection or collar 26, through which the heated air and products of combustion may pass from the passage 17, when desired, and I may also provide the top portion of the heater with outlet apertures 27,
 20 above the deflector plate 15, to auxiliate the passage of heated air from the heater, so that a considerable volume of air will be continually passing through the heater while in use.

The objects of the perforations, above the burner, are to completely surround the flame with air, so that complete combustion of the gas will result; and to temper the heat adjacent to the walls of the heater, so that unsightly discoloration of the walls, by excessive heat, is avoided. Moreover, by thus
 30 supplying a large quantity of moderately heated air, the objectionable feature of intensely heated air rising rapidly to the ceiling is avoided; the advantageous difference between the operation of my improved heater and of ordinary heaters, being quite obvious, since the moderately heated air spreads through the inhabited portion of
 35 the room, tempering the cooler air in the room; while more intensely heated air above the heads of the inhabitants, does not mix or temper the lower strata of air in the room, nor does it perform any desirable function.

In operation, the burner being lighted, air enters through the main front opening and through the perforations 24, and together with the force of the gas from the burner jet carries the flame in an approximately horizontal direction toward the rear wall of the
 40 heater; whereupon, air passing upward through the passage 14 and inward through the perforations 25, supplies oxygen to the terminus of the flame and directs it upwardly through the passage 18; and so the
 45 air, from the several openings and perforations, after absorbing heat from the flame, passes out through the several openings above the deflector plate.

It will be seen that I have provided a
 50 heater of this character which is fully capable of attaining the foregoing objects, and in a thoroughly practical and efficient manner.

I do not limit my invention to the exact
 65 details of construction, combination and arrangement of parts as herewith described and illustrated, but my invention may only be limited by a reasonable interpretation of the following claims.

What I claim is:

1. The combination in a gas stove, of a hollow body having side walls and a rear wall and a front wall, said front wall having a relatively large front opening there-
 70 through, a horizontal gas burner supported by the side walls and being located near the front wall above said front opening and adapted to direct a flame rearwardly, a forward deflector plate joined onto the front
 75 wall above said front opening and extending rearwardly therefrom, said front wall being provided with a horizontally disposed series of apertures communicating with the interior portion of the stove below said de-
 80 flector plate and above said burner for directing a mitigated current of air between said deflector plate and said flame, said burner being spaced apart from said forward deflector plate to a sufficient extent for
 85 preventing flame contact with said plate, and an inclined rear deflector plate secured on the rear wall and extending upward and forward so as to overhang the forward de-
 90 flector plate and to provide a narrow passage therebetween, said side walls being provided with outlet openings above the rearwardly extending deflector plate and in front of the forwardly extending deflector
 95 plate, and said rear wall being provided with perforations slightly below the rear deflector plate, whereby an air current is established between said plate and the flame and products of combustion from the burner.

2. The combination in a gas stove, of a
 10 hollow body having side walls and a rear wall and a front wall, said front wall being provided with a relatively large front opening, a burner supported near the front wall
 11 on a plane above said front opening and extending horizontally across said body and adapted to throw a flame toward the rear wall, a deflector plate joined onto the rear
 11 wall above the front opening and above the burner and extending rearwardly, said front
 11 wall and said side walls being provided with a substantially horizontal series of apertures on a plane above the burner and below the
 120 deflector plate for supplying a current of air between said deflector plate and said flame and thereby preventing flame contact with said deflector plate, an inclined de-
 125 flector plate secured on the rear wall and extending upwardly and forwardly therefrom in such relation to the first said deflector plate as to provide a passage therebetween for the combustion products, said rear wall being provided with perforations

slightly below the forwardly extending deflector plate, said body being provided with outlet openings on a plane above the rearwardly extending deflector plate and in front of the forwardly extending deflector plate.

In testimony whereof I have signed my

name to this specification in the presence of two subscribing witnesses.

PORTE McKEEN BRADLEY.

Witnesses:

H. M. LARIDON,

L. M. STOTTERMEYER.