No. 811,273. PATENTED JAN. 30, 1906.

W. H. BROWN.

HEATER.

APPLICATION FILED FEB. 13, 1905.

Fig. 1.

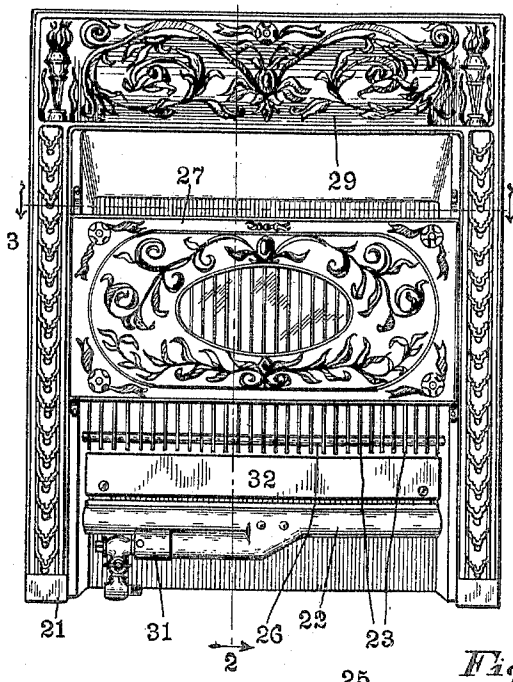


Fig. 4.

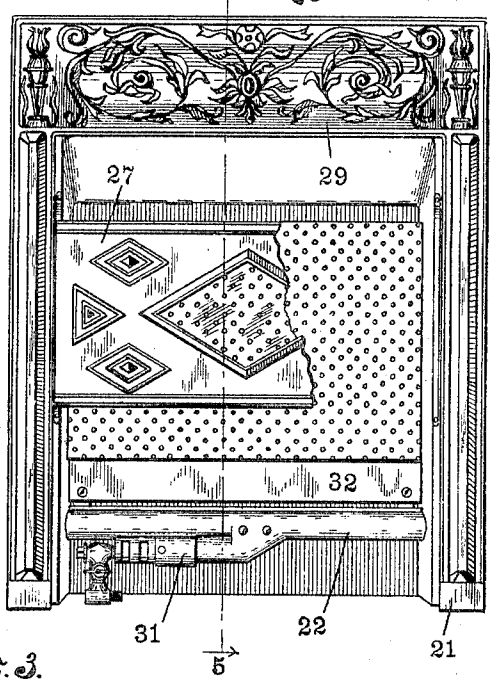


Fig. 3.

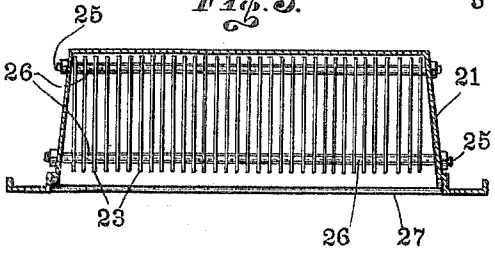


Fig. 2.

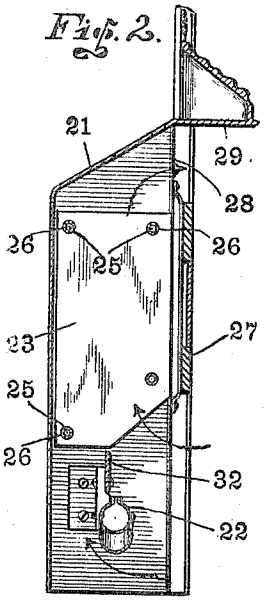
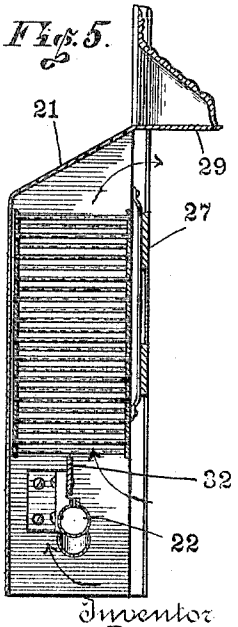


Fig. 5.



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WILLIAM H. BROWN, OF INDIANAPOLIS, INDIANA.

HEATER.

No. 811,273. Specification of Letters Patent. Patented Jan. 30, 1906.

Application filed February 13, 1905. Serial No. 245,428.

To all whom it may concern:

Be it known that I, WILLIAM H. BROWN, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Heaters, of which the following is a specification.

On account of their cleanliness and convenience heating stoves and grates in which gas is used as the fuel are highly desirable. The employment of illuminating-gas (such as is commonly furnished in cities) is, however, excessively costly with heating apparatus of the ordinary construction.

It is the object of my invention to produce a heater by means of which with a moderate consumption of gas a comparatively large amount of heat may be produced, thus reducing the expense of the use of such gas as a heating fuel to within an amount which can reasonably be afforded by the ordinary user.

Said invention consists in the arrangement, within the combustion-chamber of a grate, stove, or the like, of a multiplicity of small heat absorbing and transmitting parts arranged in such relation to a suitable gas-burner as to receive the heat therefrom and also so arranged as to cause a circulation of air therebetween, which air shall be drawn in at one place and discharged at another, thereby causing a continual circulation of the air in a room and heating it at that point in its course where it passes through my improved heater.

Referring to the accompanying drawings, which are made a part hereof, and on which similar reference characters indicate similar parts, Figure 1 is a front elevation of a fireplace or grate embodying one form of my said invention; Fig. 2, a transverse vertical sectional view thereof at the point indicated by the dotted line 2 2 in Fig. 1; Fig. 3, a horizontal sectional view of the same at the point indicated by the dotted line 3 3 in Fig. 1; Fig. 4, a view similar to Fig. 1, except that wires or rods are substituted for plates as the heat absorbing and radiating means; and Fig. 5 a vertical sectional view at the point indicated by the dotted line 5 5 in Fig. 4.

I will now proceed to describe in detail that form of my invention illustrated in Figs. 1, 2, and 3. In said drawings the portions marked 21 is the shell or body of a fireplace or grate. Within this near the bottom I place a gas-burner 22, extending horizontally from side to side of said fireplace or grate. Directly above this burner I arrange a multiplicity of heat absorbing and transmitting plates 23, these being preferably mounted on four horizontal rods 25 and having interposed between them washers or distance-blocks 26, by which they are held at the desired distance apart. In front of said plates I place a wall 27, which is preferably, although not necessarily, of an ornamental character. In Fig. 1 I have shown this wall as composed partly of an oval plate of glass. It may, if desired, be wholly of plate or other glass. There is an open space at 28 above the top of this wall, and there is preferably an overhanging ledge 29 above this opening, which projects out somewhat into the room and serves to direct the current of heated air outwardly into the room in operation.

In operation the burning gas strikes the lower edges of the plates 23 and imparts thereto a high degree of heat. The ascending current from the burning gas passes between the vertical plates, which are placed close together and form a series of vertical flues, carrying the air therewith. The burning gas imparts its heat to the walls of the flues, and they in turn transmit their heat to the currents of air which pass through the flues and are discharged into the room at the upper part of the device, so that this process of drawing the air of the room into the bottom of the apparatus and discharging at the top in a heated condition gradually heats all the air in the apartment.

In Figs. 4 and 5 I have shown a multiplicity of horizontal rods or wires instead of the plates. The effect, however, is about the same.

As shown in Figs. 1 and 2, an adjustable sleeve 31 is provided as part of the gas-burner. This is to be slipped back and forth, and the proportion of atmospheric air to be mixed with the gas as it is burned is thus determined.

I prefer to put a plate 32 immediately behind the perpendicular plane of the gas-discharging orifices of the burner, this having a tendency to direct the flame upwardly more directly onto the plates or rods which are to be heated. This is preferably to be covered with asbestos, which will become incandescent from the flame of the gas, and thus give an ornamental appearance.

Having thus fully described my said inven-

tion, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, in a heater, of the inclosing structure, a gas-burner in the lower part of said structure, a multiplicity of heat absorbing and transmitting members arranged in vertical planes above said burner whereby a series of unobstructed flues for the ascending current from the burning gas is provided, said structure being provided with an open space below said members into which the air will pass and an open space above said members leading into the room through which said air will be discharged after being heated, all substantially as shown and described.

2. The combination, in a heater, of the inclosing structure, a gas-burner arranged in the lower portion of said structure, a multiplicity of heat absorbing and transmitting members arranged in vertical planes above said burner, said inclosing structure being provided with air ingress and egress openings below and above said members, and a projecting ledge at the upper side of the egress-opening extending out from the structure whereby the air when heated is directed outwardly into the room, all substantially as shown and described.

3. The combination, in a heater, of the inclosing structure, a gas-burner arranged in the lower portion of said structure, heat absorbing and transmitting plates arranged vertically within the structure above the gas-burner, rods passing through said plates whereby they are supported, distance-washers arranged on said rods between said plates whereby they are held the predetermined distance apart, said inclosing structure being provided with suitable openings in its lower and upper portions for the admission and discharge of the air, and an ornamental plate in the front of said structure forming the closing-wall between said openings.

4. The combination, in a heater, of the inclosing structure, a gas-burner arranged in the lower portion of said structure, heat absorbing and transmitting plates arranged vertically within the structure above the gas-burner, rods passing through said plates whereby they are supported, and distance-washers arranged on said rods between said plates whereby they are held the predetermined distance apart, said inclosing structure being provided with suitable openings in its lower and upper portions for the admission and discharge of the air.

In witness whereof I have hereunto set my hand and seal, at Indianapolis, Indiana, this 31st day of January, A. D. 1905.

WILLIAM H. BROWN. [L. S.]

Witnesses:

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