Feb. 17, 1925. 1,526,541

W. J. GROTH

FIREPLACE HEATER

Filed Dec. 26, 1923

FIG. 2.

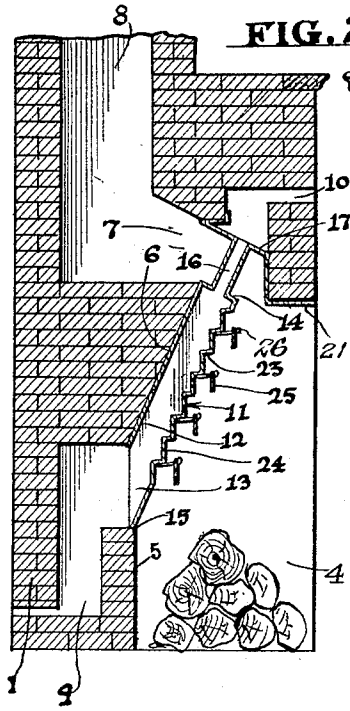


FIG. 1.

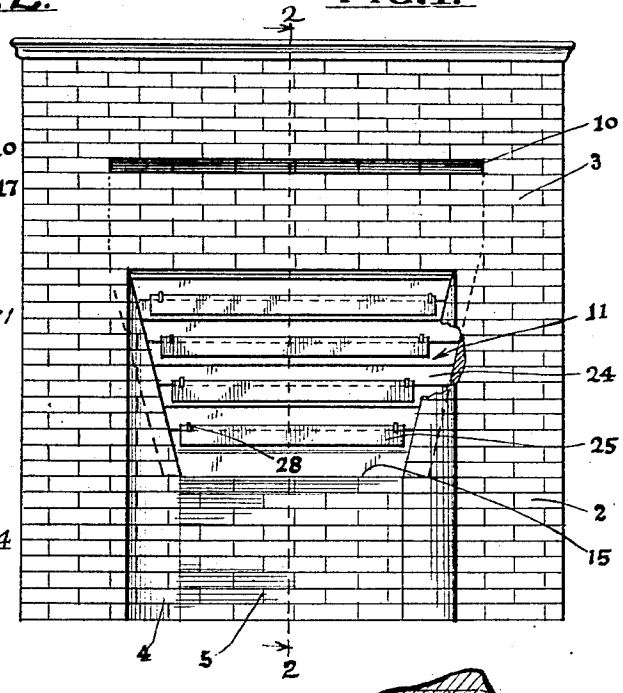


FIG. 3.

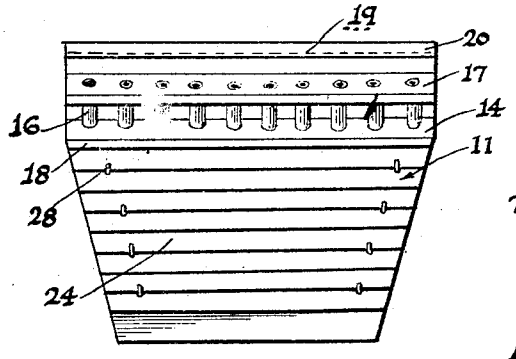


FIG. 4.

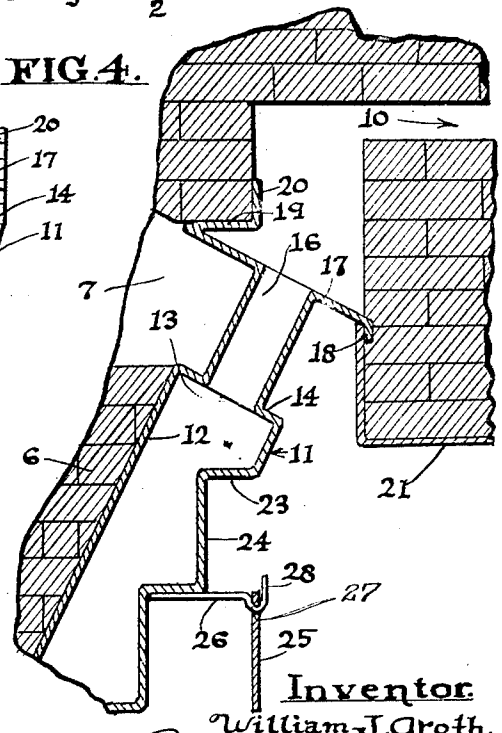
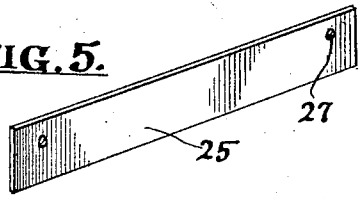


FIG. 5.



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UNITED STATES PATENT OFFICE.

WILLIAM J. GROTH, OF LOS ANGELES, CALIFORNIA.

FIREPLACE HEATER.

Application filed December 26, 1923. Serial No. 682,655.

To all whom it may concern:

Be it known that I, WILLIAM J. GROTH, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented certain new and useful Improvements in Fireplace Heaters, of which the following is a specification.

This invention is a heater for use in connection with an open fireplace, and consisting of an air chamber or conduit receiving fresh air from a suitable source, and arranged so as to present the maximum surface to the heat from the fireplace, and having means creating the necessary draft through the fireplace while maintaining the heat therefrom in intimate contact with the surface of said air chamber, in order to thoroughly heat the fresh air passing through the same, the heated air being discharged from the air chamber at a point above the fireplace.

It is the object of the invention to position the air chamber at the back of the fireplace, and extending across the smoke flue for discharge into a conduit having an opening therefrom into the room at a point above the fireplace, the portion of the air chamber extending across the smoke flue being arranged to permit the smoke being drawn into the flue, and the portion of said air chamber communicating with the hot air conduit having means for readily anchoring the same so as to firmly support the heater in place.

The invention will be readily understood from the following description of the accompanying drawings, in which:

Fig. 1 is a front elevation of a fireplace having the improved heater mounted therein.

Fig. 2 is a vertical section on the line 2—2 of Fig. 1.

Fig. 3 is a front elevation of the heater unit.

Fig. 4 is a fragmentary detail section on the line 2—2 of Fig. 1.

Fig. 5 is a perspective view of one of the baffles.

A fireplace having the improved heater mounted therein is illustrated in the drawings as a brick structure built against the outer wall 1 of a house. The fireplace includes a rear wall of substantial thickness, and sides 2 and top 3 extending outwardly from the rear wall and forming a usual fire space 4 in the front of the fireplace structure and at the base thereof.

The lower portion 5 of the rear wall of the fireplace structure has a vertical front surface, and the upper portion 6 of said wall has a front surface slanting upwardly and forwardly. A smoke flue 7 extends rearwardly through the fireplace structure at the top of the fire space 4 and over the top of wall 6, and terminates in a vertical chimney 8 against wall 1 of the house.

A vertical flue 9 is formed in wall 5, said flue opening at its upper end into the fire space at a point spaced below the base of wall 6, and the lower end of the flue extends rearwardly through wall 5 and through wall 1 of the house, so as to open to the outer atmosphere, for the admission of fresh air.

A conduit 10 is open to the front portion of smoke flue 7, and extends upwardly through the fireplace structure and thence outwardly therethrough, so as to open into the room in which the fireplace is built, at a point spaced above the fire space 4.

The heater mounted in the fireplace as thus described, is a box like structure having front and rear walls 11 and 12, and side walls 13 and upper end wall 14, the lower end of the structure being open.

This box like structure is mounted against wall 6, the front lower edge of the structure resting upon a ledge 15 formed upon wall 5 at the base of flue opening 9, so that the lower open end of the structure is received against wall 5 and over the opening of flue 9, for discharge of fresh air from said flue into the heating box.

The upper end wall 14 of the heating box is at the upper end of wall 6 and at the base of the smoke flue, and transversely spaced pipes 16 project beyond wall 14 across the smoke flue to the end of conduit 10 which opens into said smoke flue, the spacing of said pipes permitting the free passage of smoke through flue 7 between said pipes.

A plate 17 is mounted on the ends of pipes 16 and is adapted to close the end of conduit 10, the front edge of said plate having a depending lip 18 received against the front wall of conduit 10. The rear portion of plate 17 is reversely bent as shown at 19, said reverse bend being received against the upper wall of smoke flue 7 in back of conduit opening 10, and the front edge of said

reverse bend extends upwardly within conduit 10 and against the rear wall thereof as shown at 20.

An angle iron 21 extends across the fire space 4, with one arm thereof against the masonry at the top of said fire space, and the other arm of said angle iron against the front wall of conduit 10, so that the depending lip 18 of plate 17 may be hooked over the upper edge of said angle iron.

It will thus be seen that the upper end of the heater is firmly held in position, by the abutment of angle piece 19—20 against the rear wall of conduit 10 and the upper wall of flue 7, and the engagement of lip 18 with angle iron 21 at the front wall of conduit 10.

In order to obtain maximum heating of the box like structure mounted against wall 6 of the fireplace, the front wall 11 of said structure is preferably corrugated so as to expose a relatively large surface to the heat from the fire in fire space 4. As an instance of this arrangement, the front wall 11 may be stepped as clearly shown in Fig. 2, so as to expose a series of alternate horizontal and vertical surfaces 23 and 24 to the heat from the fire.

In order to maintain the heat in intimate contact with the stepped surface of wall 11, a series of baffles 25 are mounted in spaced relation in front of the vertical surfaces 24 of said wall. These baffles are preferably also spaced from the horizontal surfaces 23 of the wall, in order to provide a draft opening between the baffles and the heating box.

The mounting for the baffles is illustrated as comprising arms 26 projecting from wall 11 at the horizontal surfaces 23 and at the respective sides of fire space 4, the baffles having apertures 27 adapted to receive hooks 28 at the ends of the arms for removably supporting the baffles in place.

By the improved construction as thus described, the heater may be readily mounted in place and firmly anchored in position, the heating surface of the conduit for fresh air being adapted for maximum heating thereof, due to the large surface which is exposed to the heat from the fire, and the arrangement of the baffles maintaining the heat in intimate contact with said heating surface.

It will be apparent that various changes may be made in the construction, combination, and arrangement of parts as thus described, without departing from the spirit of the invention.

What is claimed is:

1. An air heating chamber adapted to be mounted in the back of a fireplace, and a plurality of baffles supported by said heating chamber in front of the front wall thereof and spaced outwardly from said front wall, said baffles being also vertically spaced to permit direct heat radiation from said heating chamber outwardly through said fireplace between said baffles.

2. An air heating chamber for the back of a fireplace, and vertically spaced baffles in front of the front wall of said chamber and spaced outwardly therefrom.

3. An air heating chamber for the back of a fireplace having a front wall stepped to form alternate horizontal and vertical surfaces, and baffles in front of the vertical surfaces of said wall and spaced outwardly therefrom.

4. An air heating chamber adapted to be mounted in the back of a fireplace and having a front wall stepped to form alternate horizontal and vertical surfaces, arms projecting forwardly from said front wall, and baffles supported on said arms and extending in front of the vertical surfaces of the front wall in outwardly spaced relation therefrom.

In testimony whereof I have affixed my signature to this specification.

WILLIAM J. GROTH.