No. 718,446. PATENTED JAN. 13, 1903.

C. H. FOSTER.

HOT AIR REGISTER.

APPLICATION FILED MAR. 5, 1902.

NO MODEL. 3 SHEETS—SHEET 1.

Fig.1.

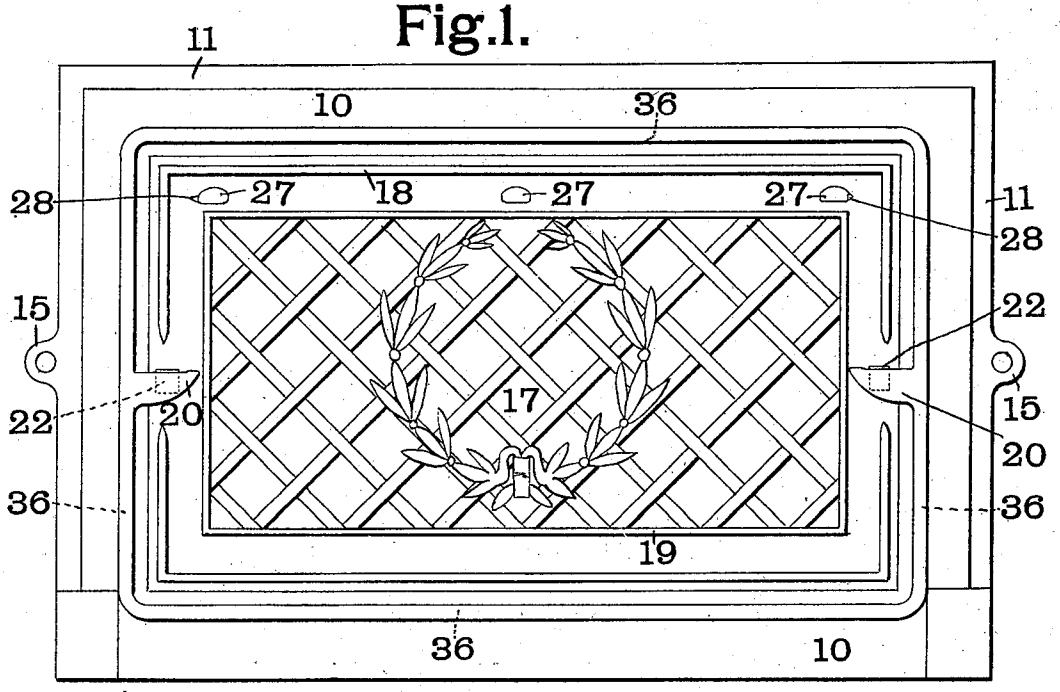


Fig.2.

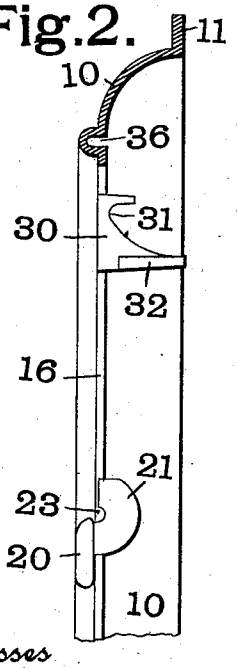


Fig.3.

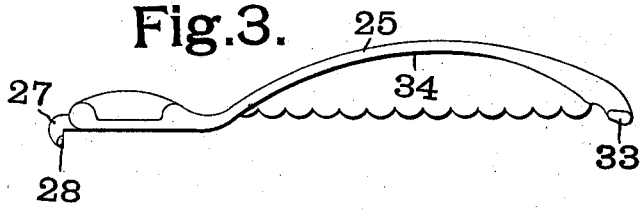
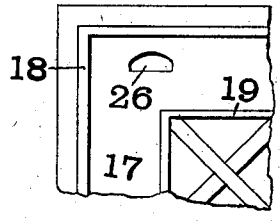


Fig.4.



Witnesses

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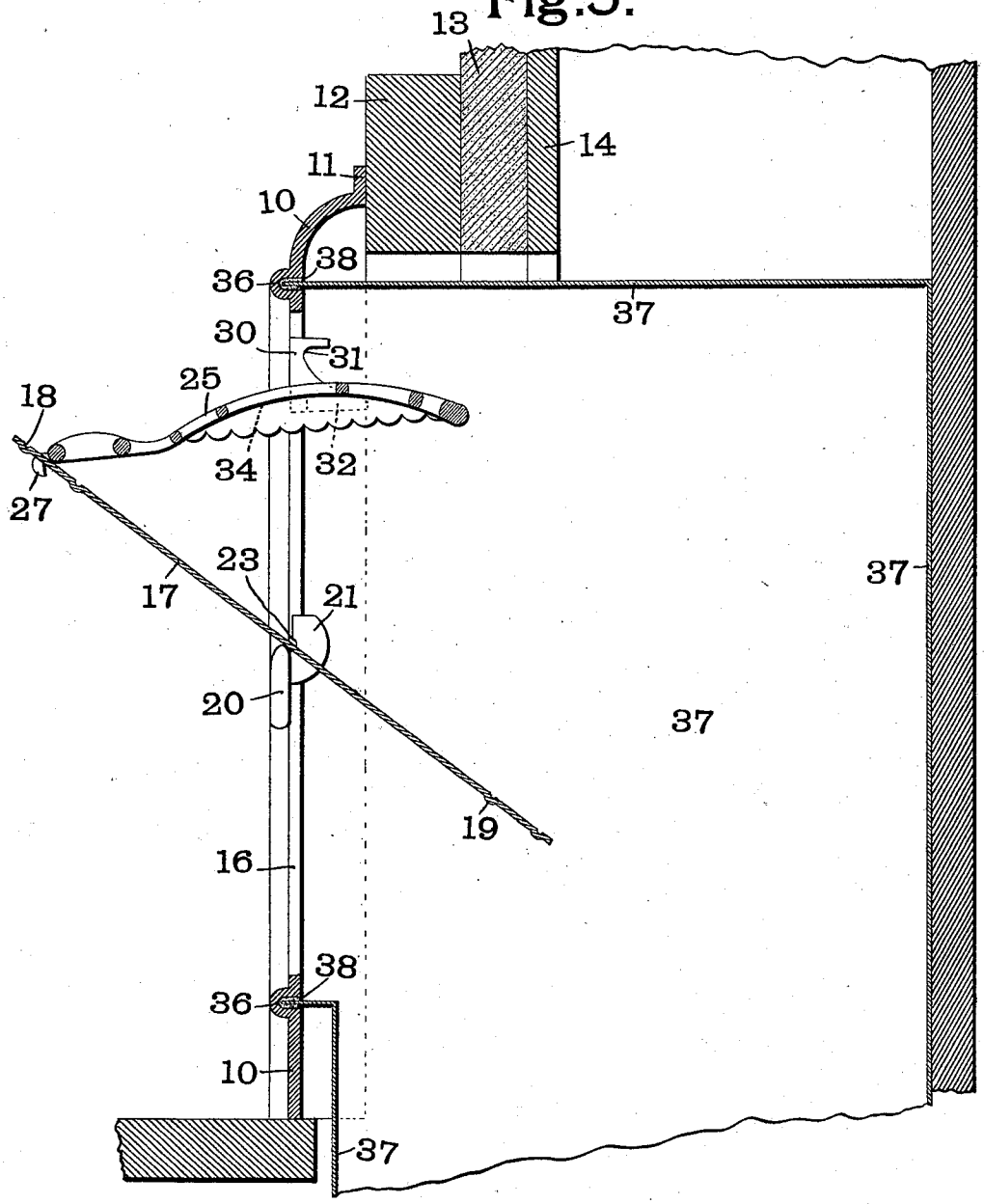
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NO MODEL. 3 SHEETS—SHEET 2.

Fig.5.



Witnesses

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NO MODEL. 3 SHEETS—SHEET 3.

Fig.6.

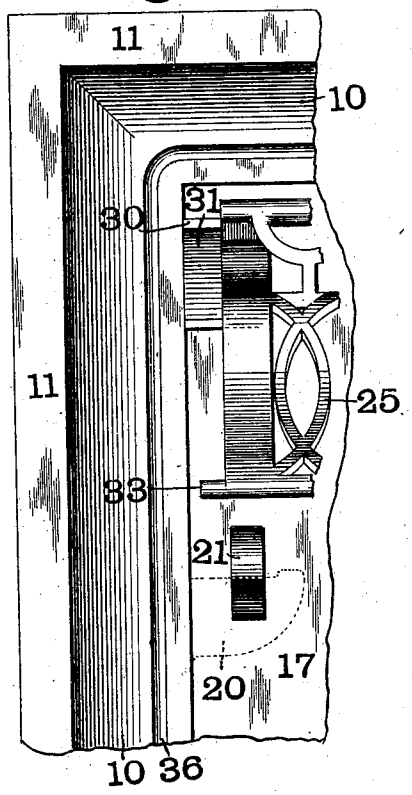


Fig.7.

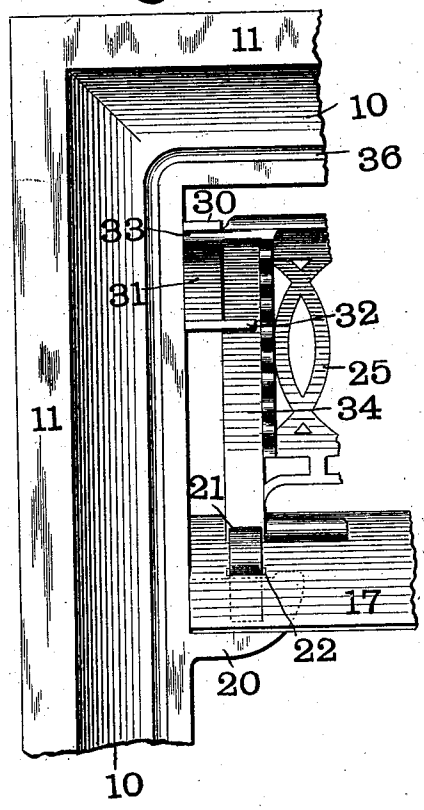


Fig.8.

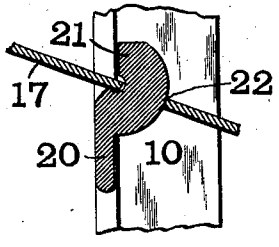
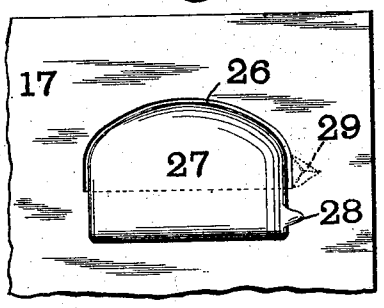


Fig.9.



Witnesses

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UNITED STATES PATENT OFFICE.

CHARLES H. FOSTER, OF OMAHA, NEBRASKA.

HOT-AIR REGISTER.

SPECIFICATION forming part of Letters Patent No. 718,446, dated January 13, 1903.

Application filed March 5, 1902. Serial No. 96,764. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. FOSTER, a citizen of the United States, residing at Omaha, in the county of Douglas and State of Nebraska, have invented a certain new and useful Hot-Air Register, of which the following is such a full, clear, and exact description as will enable any one skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to hot-air registers, and more particularly to that class of registers known as "side-wall" registers, which are placed in a vertical position in or against the side wall of a room instead of being placed in a horizontal position in the floor.

My invention consists in various novel features and details of construction, which are fully described in the following specification and pointed out in the claims affixed thereto.

In the accompanying drawings, which illustrate one form of register made in accordance with my invention, Figure 1 is a front elevation, on a slightly-reduced scale, the valve being shown closed. Fig. 2 is a vertical section through a portion of the frame of the register. Fig. 3 is an end view of the grille. Fig. 4 is a detail view showing a portion of the valve. Fig. 5 is a vertical section of the complete register, together with a portion of the wall to which the same is attached, the valve being shown partially open. Fig. 6 is a rear view of a portion of the register, the valve being closed. Fig. 7 is a view similar to Fig. 6, but showing the valve open. Fig. 8 is an enlarged sectional view showing a detail of construction, and Fig. 9 is an enlarged elevation showing a detail of construction.

Like marks of reference refer to similar parts in the several views of the drawings.

10 represents the border of the register, which is preferably made of cast metal. The border 10 is preferably curved, as shown in Figs. 2 and 5, so as to form a rearwardly-extending flange adapted to seat against the wall. This flange is preferably provided with a flattened portion 11, so as to give a greater bearing-surface against the wall.

In Fig. 5, 12 represents the base-board of the wall, against which the flattened portion 11 rests.

13 represents the plaster, and 14 the lathing, of the wall.

The frame 10 is preferably held against the wall by means of screws passing through lugs 15, Fig. 1, formed on the flattened portion 11 of the frame. Formed in the frame 10 is a valve-opening 16, preferably rectangular in form. Fitting in the valve-opening 16 is a valve 17, preferably made of thin sheet-steel. The valve 17 is provided with beads 18 and 19 adjacent to its edges to strengthen it, and it may also be stamped or otherwise ornamented, as shown in Fig. 1, to add to its appearance and also to strengthen it. Carried by the sides of the frame 10 are two inwardly-projecting bearing-arms 20, upon which the valve 17 turns. In order to keep the valve 17 in position on the bearing-arms 20, I provide each of said arms with a semicircular bearing-post 21, which passes through a rectangular opening 22 in the valve 17. Each of the bearing-posts 21 is provided with a recess 23, which prevents the valve 21 from being disengaged from the said post except when in one particular position, as will be hereinafter described.

25 is a grille, which is adapted to act as a foot-rest when the valve is in its open position. The grille 25 is fitted to the valve 17, as will be described. Near the upper edge of the valve 17 are formed three openings 26, similar to the one shown in Fig. 4. Formed on the grille 25 are three corresponding pivot-lugs 27, which are adapted to fit the openings 26. On the two end lugs 27 I form slightly-projecting points 28. When it is desired to assemble the parts of the register, I pass these pivot-lugs 27 through the openings 26. As the end lugs 27 pass through the openings 26 the points 28 will force their way through the thin sheet-steel, bending up a bur as they pass through the openings. After they are in position I bend this bur down, and thus prevent the lugs from passing back through the openings. Carried by the side of the frame 10 are brackets 30, each of which is provided with a rearwardly-facing recess 31 and a guide-lug 32. The recesses 31 are adapted to engage with stops 33, Fig. 3, at the rear end of the grille 25 when the valve is in its open position, thus limiting the movement of the valve and the grille. The grille 25 is pro-

vided with curved guideways 34, which ride on the guide-lugs 32. On account of the curved form of these guides 34 the valve 17 can be adjusted in any suitable position, the friction of the guide upon the lug being sufficient to hold the valve in the required position.

Within the flange 10 and surrounding the valve-opening 16 I form in the border 10 a groove 36, which is adapted to receive the edges of the flue-pipe 37. In order to make a tight joint between the pipe and the register, I prefer to fill this groove 36 with cement 38, as shown in Fig. 5, before inserting the edges of the flue-pipe. By means of this construction I not only provide a simple and efficient means for making a tight joint between the register and the flue-pipe, but I am also enabled to utilize the lath-and-plaster space and also the base-board space for the flue-pipe, as the front side of the flue-pipe can pass down in front of the joining-line of the register and base-board, as is clearly apparent from Fig. 5 of the drawings.

The operation of my register is so simple as to scarcely need special explanation. When it is desired to open the register, the lower end of the valve 17 is forced inwardly. As the lower end moves inwardly the upper end will move outwardly, the curved guides 34 of the grille 25 riding on the guide-lugs 32. When the valve is completely open, the stops 33 will come into engagement with the recesses 31 of the brackets 30, and thus positively stop the movement of the valve and grille, so that the grille may be used as a foot-rest. When it is desired to disconnect the valve from the pivot-posts 21, the grille 25 is raised, so that the stops 33 will pass above the brackets 30. The grille can be now brought completely in front of the frame 10 and the valve 17 tipped until it becomes disengaged from the pivot-posts.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a hot-air register, the combination with a frame, of a sheet-metal valve pivoted therein and provided with an opening, a grille provided with a pivot-lug adapted to fit the opening in said valve, and a projection formed on said lug to prevent its return through said opening.

2. In a hot-air register, the combination with a frame provided with a guide-lug, of a valve pivoted in said frame, a grille pivoted to said valve, and a curved guide carried by said grille and riding on said lug.

3. In a hot-air register, the combination with a frame, of an inwardly-projecting arm carried by said frame, a recessed semicircular pivot-post carried by said arm, and a valve provided with an opening embracing said pivot-post and engaging with both the recess and the convex face of said pivot-post.

4. In a hot-air register, the combination with a frame, of an inwardly-projecting arm carried on the side of said frame, a recessed semicircular pivot-post carried by said arm, and a valve provided with an opening embracing said post and engaging with both the recess and the convex face of said pivot-post.

5. In a hot-air register, the combination with a frame provided with a valve-opening, of a rearwardly-extending flange surrounding three sides of said frame, the fourth side being left open, and a flue-box projecting through said open side, said frame being provided with a groove surrounding said valve-opening for receiving the edges of said flue-box.

6. In a hot-air register, the combination with a frame provided with a valve-opening, of a single rearwardly-projecting flange carried by said frame and adapted to contact with the wall, and a flue-pipe projecting beyond the point of contact of said flange with said wall and joining said frame.

In testimony whereof I have hereunto set my hand and affixed my seal in the presence of the two subscribing witnesses.

CHARLES H. FOSTER. [L. S.]

Witnesses:
J. H. BRYSON,
W. A. ALEXANDER.