No. 782,707. PATENTED FEB. 14, 1905.

H. SYMONDS.

HOT AIR REGISTER.

APPLICATION FILED JAN. 16, 1903. RENEWED JAN. 11, 1905.

2 SHEETS—SHEET 1.

Fig. 1.

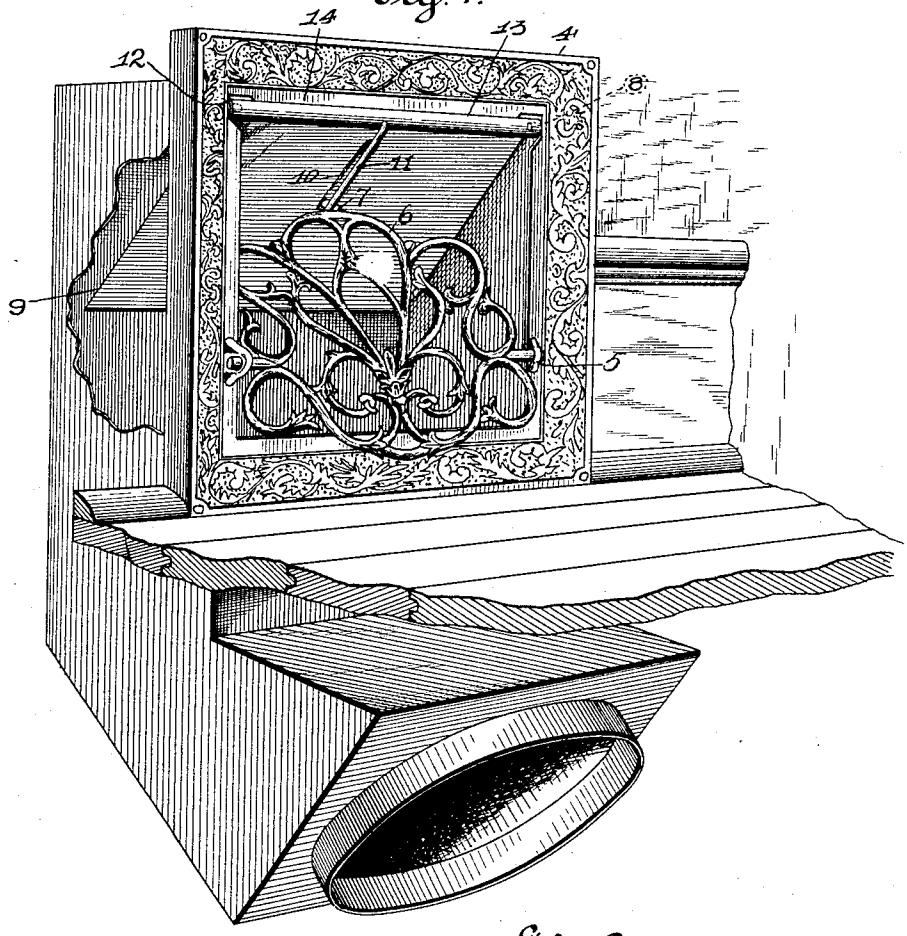
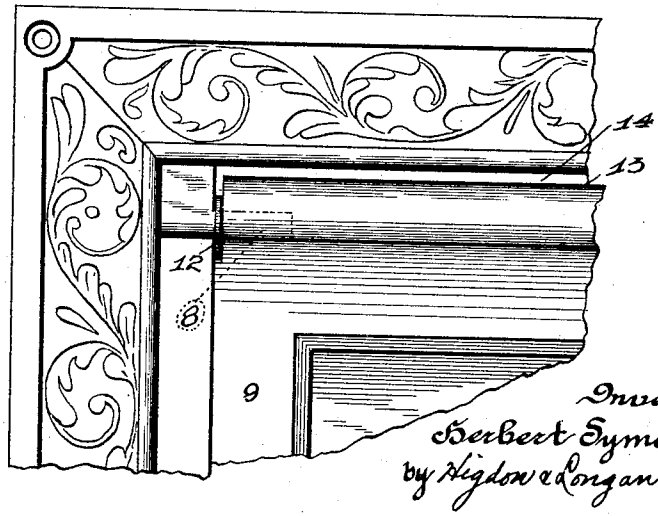


Fig. 2.



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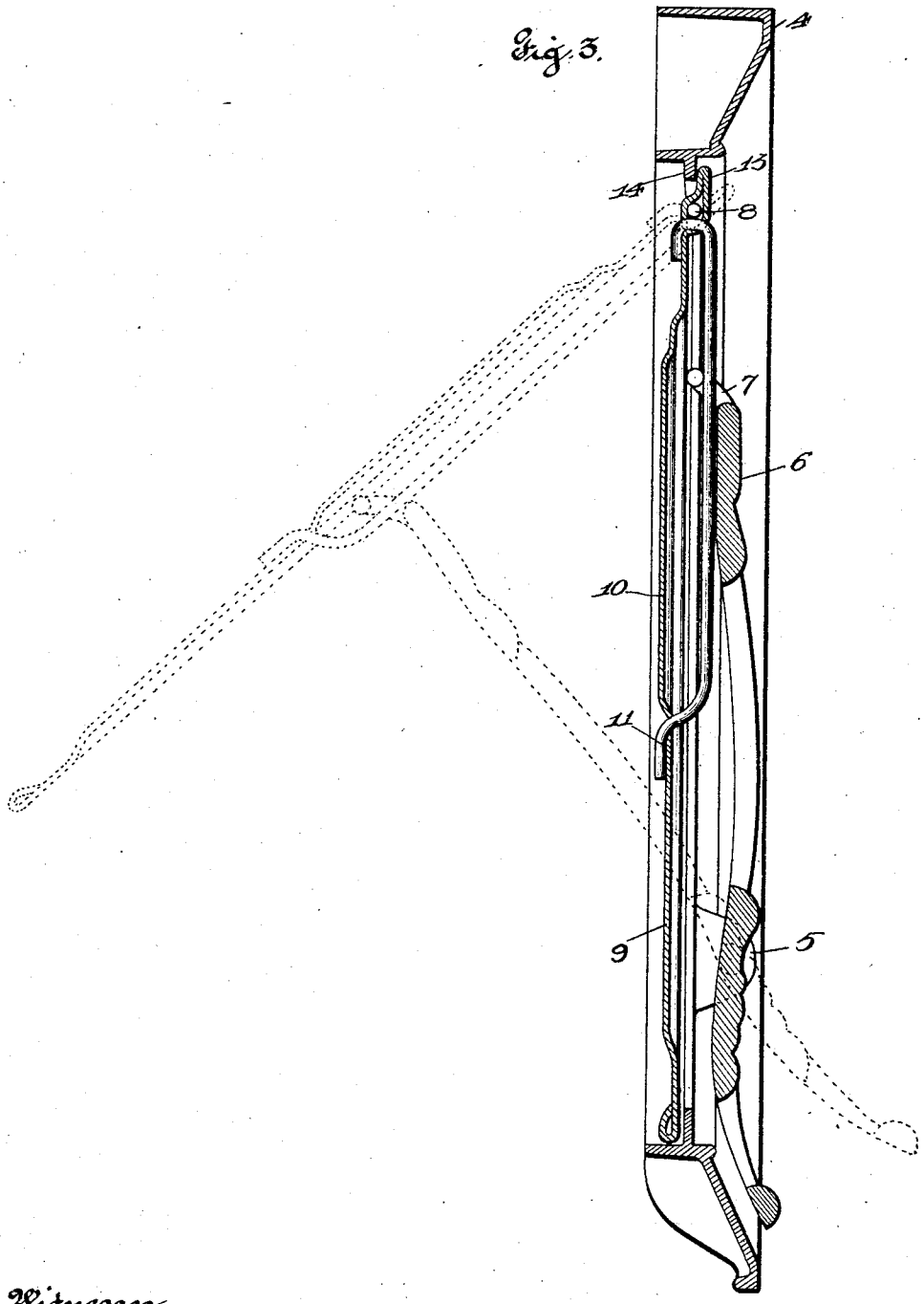
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2 SHEETS—SHEET 2.

Fig. 3.



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No. 782,707. Patented February 14, 1905.

UNITED STATES PATENT OFFICE.

HERBERT SYMONDS, OF EAST ST. LOUIS, ILLINOIS, ASSIGNOR TO SYMONDS MANUFACTURING COMPANY, OF EAST ST. LOUIS, ILLINOIS, A CORPORATION OF ILLINOIS.

HOT-AIR REGISTER.

SPECIFICATION forming part of Letters Patent No. 782,707, dated February 14, 1905.

Application filed January 16, 1903. Renewed January 11, 1905. Serial No. 240,576.

To all whom it may concern:

Be it known that I, HERBERT SYMONDS, of the city of East St. Louis, St. Clair county, State of Illinois, have invented certain new and useful Improvements in Hot-Air Registers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to improvements in hot-air registers, and has for its object to provide for an improved hot-air register for use in walls.

My invention relates particularly to improvements upon the hot-air register which has heretofore been patented to me by Letters Patent No. 658,165, under date of September 18, 1900, both my former and my present invention relating to that class of hot-air registers in which there is a single valve controlled by the pivotal motion of a grille, and in which the grille not only serves to open, close, and adjust the valve, but also serves as a foot-rest.

In the drawings which form a part of this specification, Figure 1 is a perspective of a register embodying my invention, showing the same in place, with the adjoining floor and wall broken away to show the relative location of the flue. Fig. 2 is a detailed front view of the upper left-hand portion of register embodying my invention. Fig. 3 is a vertical mid-section of register embodying my invention.

In that embodiment of my invention which is shown in the drawings a casing or frame 4 is provided with lugs 5, in which the grille 6 is pivoted, the grille 6 being provided at its upper extremity with the hook 7. The frame 4 is also provided with inwardly-projecting lugs 8, which are in alinement with each other, and are adapted to engage with the sides of the valve 9 and to serve as pivots therefor. The valve 9 is provided with a vertical groove 10, and I have provided a wire 11, bent in the form shown in Fig. 3, so that it fits through and is held in place by perforations in the valve 9 above and below vertical groove 10 in such manner that it is adapted to engage with the hook 7, the object of the groove 10 being to depress the valve beneath the line of operation of the hook 7, so as not to interfere therewith.

By means of the wire 11 and open hook 7 I have provided simple and efficacious means whereby sufficient friction is created between the valve 9 and the grille 6, so that when the grille 6 is tilted pivotally by the foot of the operator sufficient friction exists between their contacting points, the hook 7, and wire 11 to hold the grille 6 and the valve 9 in the position in which they are left by the operator, in addition to which friction of the hook 7 and the wire 11 the wire 11 serves as a guard or stop to regulate the distance through which the hook 7 can move. When the hook 7 is bent from right to left, as shown Figs. 1 and 3, it is evident that its pressure upon the wire 11 creates the thrust toward the left side of the casing, which is calculated to cause the valve 9 to bind at its left-hand pivot. In order to take up this thrust, prevent lost motion, and prevent the valve 9 from binding, I have provided the washer 12, which is adapted to fit about the pivot by which the valve 9 is held, as shown in Fig. 2. If the hook 7 were turned in the opposite direction, the washer 12 should be placed upon the pivot 8 at the right-hand side of the casing 4.

In order to provide that the valve 9 shall be tightly fitting, it should preferably be formed along its upper edge as shown in section in Fig. 3, being bent to form the flange 13, which will extend vertically above the pivots 8 and in contact with the depending flange 14 of the casing 4, when the valve is closed. When the valve 9 has been opened by pressure on the upper part of the grille 6, so that the grille 6 and the valve 9 are in the position indicated by the dotted lines in Fig. 3, the flange 13 is carried sufficiently away from the flange 14 to permit a return draft from the room to the flue.

My present invention contains many obvious improvements over my former invention, to which I have before referred in this speci-

fication. Thus, for example, in my Letters Patent No. 658,165 the friction whereby the grille was held in position was created by means of contact-pieces situated near the pivots upon which the grille was mounted and at the side of the grille, and in that invention the friction was created between the side of the grille and the abutting inner edge of the casing. In my present invention my grille 6 and valve 9 are held in position by means of friction created between them through the hook 7 and the wire 11. By reason of the fact that the bearing-surfaces of the hook 7 and wire 11 are reduced to an extremely small area the operation of my register is by this improvement rendered freer from noise and easier and more accurate in adjustment.

It will be observed that the grille, which is situated in front of or outside of the valve, extends in opposite directions beyond the line connecting its pivots, so that by pressing the foot upon the upper or inner portion of the grille the valve may be opened to any desired extent, while pressing upon the lower or outer portion of the grille operates to positively close the valve. The operator may readily impart these movements to the valve while either standing or sitting.

The valve in my former patent could only be used in connection with a vertical hot-air register, as such valve was closed by its own weight, whereas the valve in my present invention may be placed in any desired position, either horizontally, vertically, or inclined, as by means of the frictional connection between the grille and valve the valve may be held in any position to which it may be set. When the parts are arranged as represented in the drawings, the grille operates to lock the valve in its opened position, (indicated by dotted lines in Fig. 3,) so that when set in this position the parts are not liable to be disturbed by jars or shocks, as might otherwise be the case. In my present invention the valve may be easily opened to any desired extent by the pressure of the foot against the grille, which part is arranged in convenient position to be acted upon by the foot, and the valve is held in the position to which it is moved by the frictional engagement of the hook of the grille with the rod 11, with which it has sliding engagement. This positive sliding frictional connection between the valve and grille permits the positive adjustment of the valve in either direction from any intermediate position it may occupy, which was not possible with my former construction.

Having thus described my invention, what I claim as new, and desire to have secured to me by the grant of Letters Patent, is—

1. In a hot-air register, the combination of an open frame, a pivoted valve arranged to close the opening in the frame, a rod carried by the valve, and a grille pivoted to the frame and arranged outside of the valve, the grille being provided with a hook arranged to bear with lateral pressure against the said rod and having sliding frictional engagement therewith, substantially as set forth.

2. In a hot-air register, an open frame, a valve mounted therein, a rod 11 carried by the valve, a grille pivotally mounted in the frame and arranged outside the valve, and an open hook 7 arranged to engage with the said rod to open and close the valve and also bearing with lateral pressure against the rod, whereby the valve is held in the positions to which it may be adjusted, substantially as set forth.

3. In a hot-air register, an open frame, a valve pivotally mounted therein, a rod 11 carried by the valve, a grille pivotally mounted in the frame and arranged outside the valve, a laterally-open hook 7 having frictional engagement with the rod and pressing against the same in a direction toward one edge of the valve, and a washer upon that pivot of the valve toward which the pressure of the hook is exerted, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

HERBERT SYMONDS.

Witnesses:

M. G. IRION,

ALFRED A. EICKS.