J. H. SIMONDS.

Hot Air Register.

No. 31,748. Patented March 19, 1861.

Fig. 2.

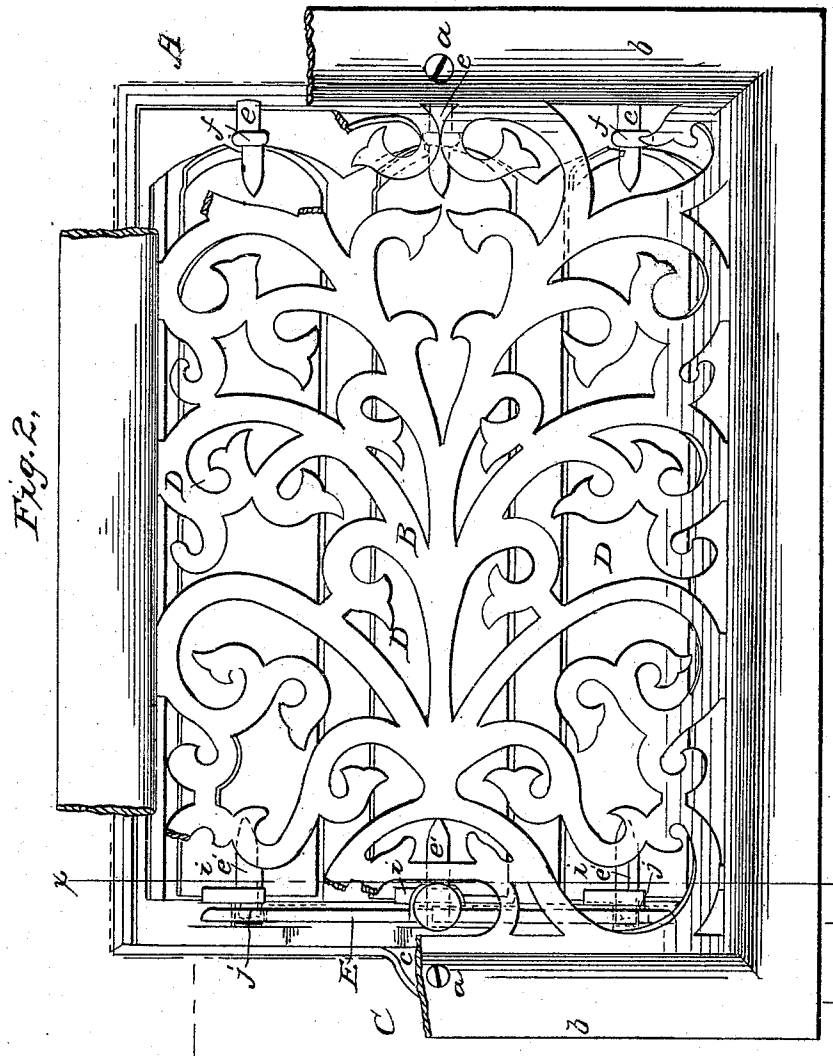
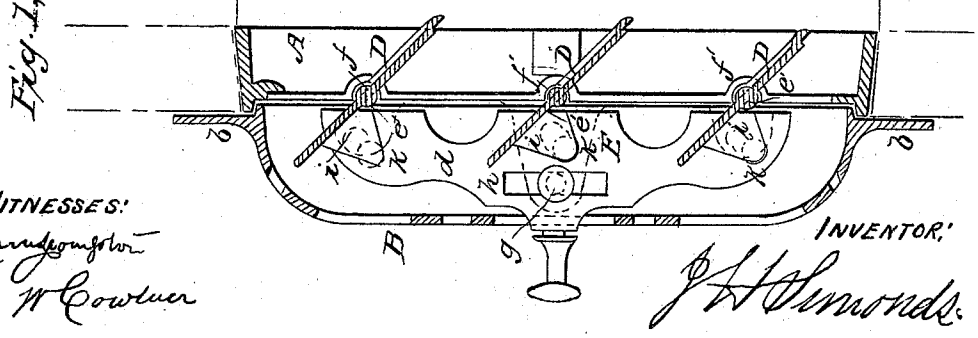


Fig. 1.



WITNESSES:

C. W. Cowles

INVENTOR:

J. H. Simonds.

UNITED STATES PATENT OFFICE.

J. H. SIMONDS, OF NEW YORK, N. Y.

HOT-AIR REGISTER.

Specification of Letters Patent No. 31,748, dated March 19, 1861.

To all whom it may concern:

Be it known that I, J. H. SIMONDS, of the city, county, and State of New York, have invented a new and Improved Register Designed for Hot-Air and Venti Ducts; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1, is a section of my invention taken in the line *x*, *x*, Fig. 2. Fig. 2, a face view of the same, with a portion broken away in order to show the construction and arrangement of the parts.

Similar letters of reference indicate corresponding parts in the two figures.

Registers for hot-air and venti-ducts as hitherto constructed, at least all those which have passed under my observation, have had their seats or valves so arranged as to work entirely within a box which projects within the flue or duct and serves as a great obstruction to the same.

The object of the within described invention is to obviate this difficulty.

The invention consists in having the open front-plate of the box of arched or convex form so as to project out from the duct and form part of the seat or valve box whereby the remaining portion of the box, or the portion thereof within the flue, may be comparatively shallow and not serve as an obstruction to the latter.

To enable those skilled in the art to fully understand and construct my invention I will proceed to describe it.

A. represents a quadrilateral cast-metal box, the sides of which are slightly oblique or inclined, as shown clearly in Fig. 1.

B. represents the open face-plate which is secured to the box A, by screws *a*, which pass through a flanch *b*, and into lugs or ears *c*, at the ends of box A., as shown in Fig. 2. The plate B. is of arched or curved form, as shown clearly in Fig. 1, and by such form an internal chamber or space *d*, is obtained of greater depth than the box A. The box A. is fitted in the side of the duct C. but the part *d*, formed by the curved face-plate B. projects out from the duct C. as shown clearly in Fig. 1.

D. D. D. are seats or valves the journals *e*, *e'*, of which are fitted in the outer part of the box A. at its junction with the flanch *b*. The journals *e*, are fitted in full bearings or sockets *f*, at one end of the box A. but the other journals *e'*, are fitted in half-bearings *f'*, as shown in Fig. 1, the journals *e'*, being retained in the half-bearings *f'*, by a slide E. which is secured to one end of the box A. by a screw *g*, said screw passing through a longitudinal slot *h*, in the slide and into the side of the box A. The screw *g*, serves as a guide for the slide E. and the slot *h*, is sufficiently long to admit of a proper degree of play or movement of the slide.

The ends of the seats or valves D. adjoining the journals *e'*, are each provided with an arm or crank *i*. These arms or cranks project from the seats or valves at right angles, and each arm or crank has a pin *j*, projecting from it at right angles, the pins *j*, being parallel with the seats or valves and passing through curved slots *k*, in the slide E. the form of said slots being shown in Fig. 1.

From the above description it will be seen that by moving the slide E. back and forth, the seats or valves D. will open and close, the pins *j*, of the arms or cranks *i*, working in the slots *k*, which are so curved of course as to correspond with the path of the movement of the pins *j*, as the seats or valves are moved.

In consequence of having the open face-plate B. of curved or arched form as described space is allowed for the seats or valves to turn it and consequently the box A. may be comparatively shallow and extend but a trifle if any into the duct C. as shown clearly in Fig. 1. The ordinary registers or those constructed in the usual way have their face-plates flush with the outer edge of the box A. and the latter therefore is necessarily equal in depth to the chamber *d*, and box A. of my invention, and the ordinary boxes A. consequently extend some distance into the duct C. and seriously obstruct it, as will be seen by referring to Fig. 1, the ordinary box A being shown in blue.

Having thus described my invention what I claim as new and desire to secure by Letters Patent; is,

Having an open face-plate B. of a hot-air or venti-duct register or curved or arched form so as to project outward from the duct C, and form a space or chamber *d*, which, in connection with box A., serves to admit of the operating of the seats or valves without interfering with or obstructing the duct as set forth.

J. H. SIMONDS.

Witnesses:
M. W. LIVINGSTON,
C. W. COWTAN.