No. 766,957. PATENTED AUG. 9, 1904.

J. G. LLOYD.

HOT AIR REGISTER.

APPLICATION FILED JAN. 6, 1904.

NO MODEL.

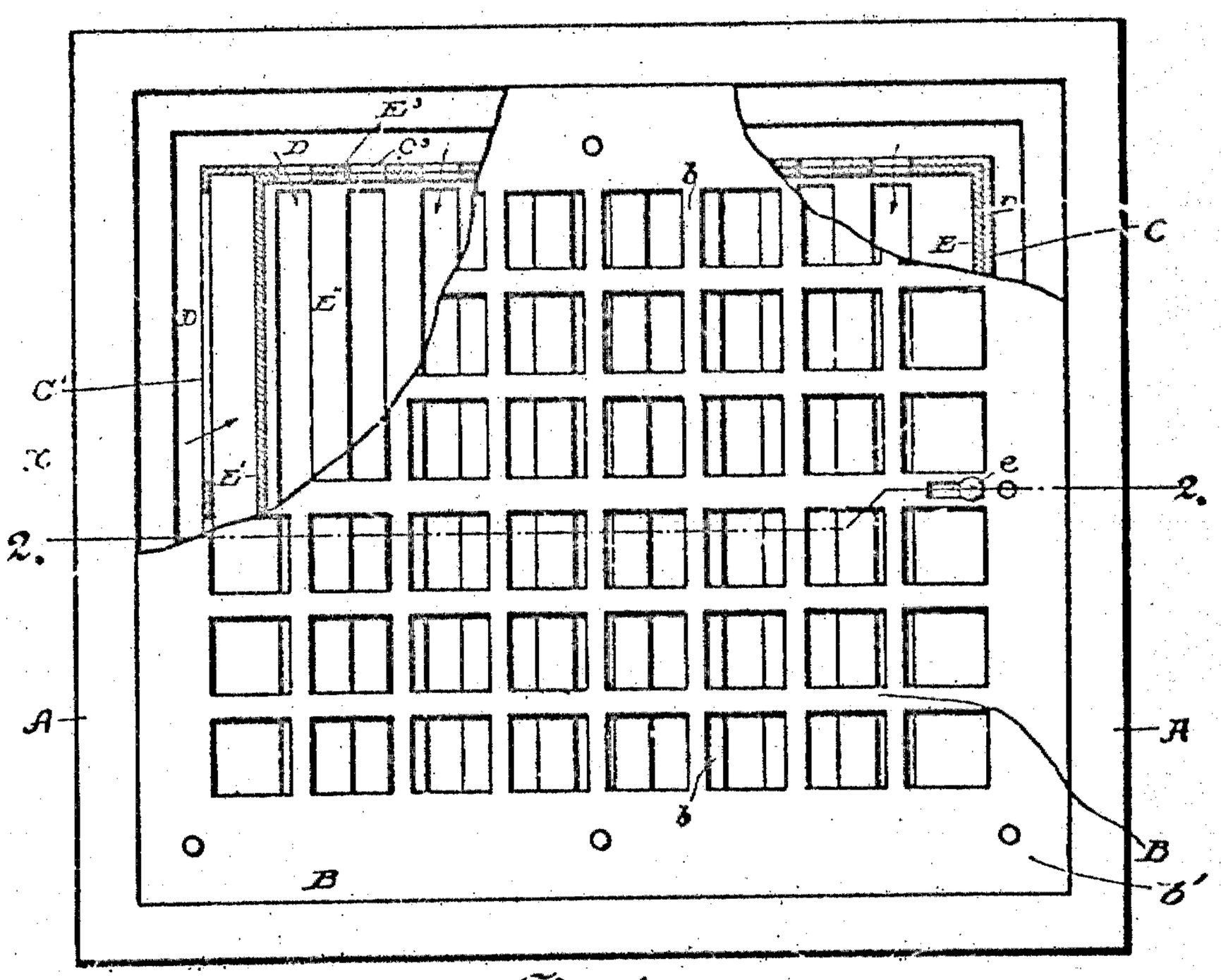

Fig. 1.

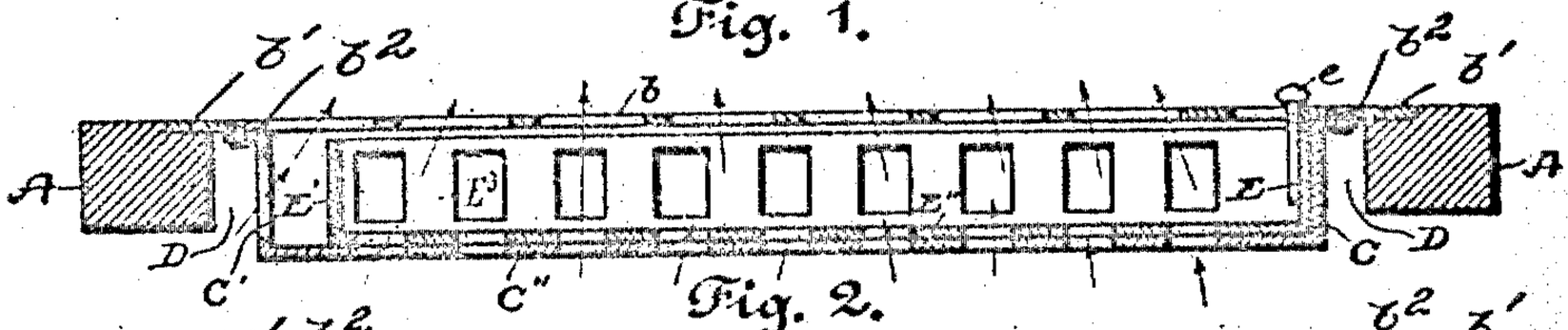

Fig. 2.

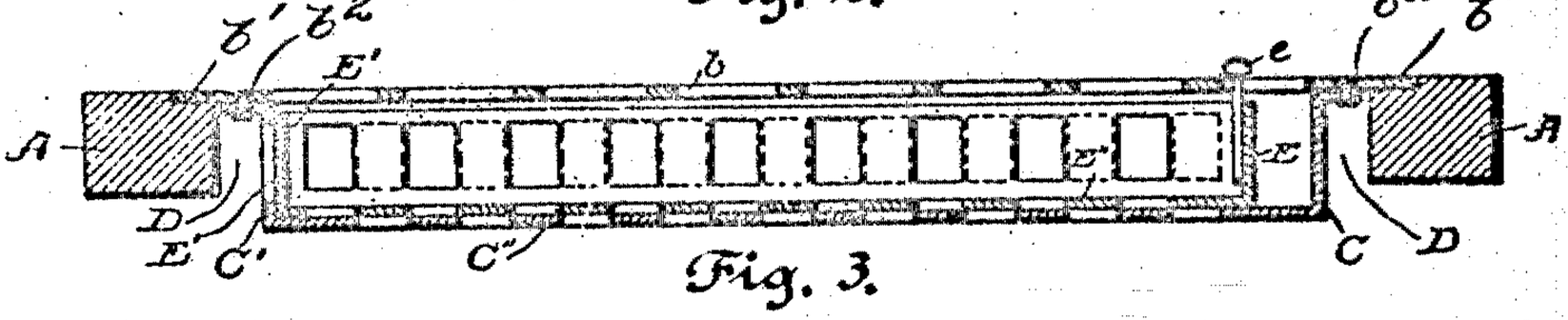

Fig. 3.

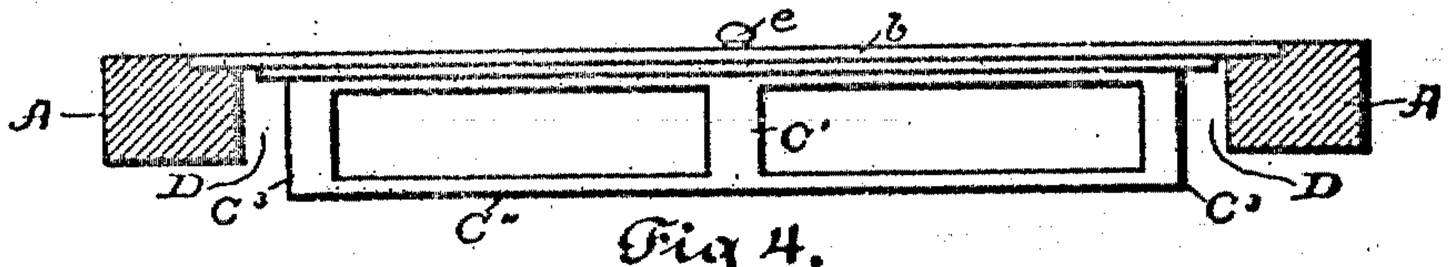

Fig 4.

Witnesses.

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No. 766,957. Patented August 9, 1904.

UNITED STATES PATENT OFFICE.

JOSEPH G. LLOYD, OF BOSTON, MASSACHUSETTS.

HOT-AIR REGISTER.

SPECIFICATION forming part of Letters Patent No. 766,957, dated August 9, 1904.

Application filed January 6, 1904. Serial No. 187,893. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH G. LLOYD, a citizen of the United States, and a resident of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Hot-Air Registers, of which the following is a specification.

This invention relates to improvements in hot-air registers for the purpose of regulating the admission of hot air from furnaces; and it consists in the construction and arrangement of parts, as will hereinafter be more fully shown and described, reference being had to the accompanying drawings, wherein—

Figure 1 is a top plan view of the improved register when open, the top plate being partly broken away. Fig. 2 is a longitudinal section on the line 2 2 shown in Fig. 1. Fig. 3 is a similar longitudinal section showing the register closed, and Fig. 4 is an end view of the register as seen from X in Fig. 1.

Similar letters refer to similar parts wherever they occur on the different parts of the drawings.

The register consists of a supporting-frame, an outer or top plate, a valve-box, and a slidable valve operating in said box and of substantially the same contour as the box, the box forming what may be termed a "valve-seat" for the valve.

The reference character A denotes a rectangular frame of known construction and which is arranged in the floor or wall opening, as is common in hot-air registers. The frame A is suitably cut away to form a continuous shoulder, and against said shoulder abuts the top plate B, and by such an arrangement the outer face of the top plate B is flush with the outer face of the frame. The top plate B is provided with a series of hot-air-outlet openings *b* and an imperforate marginal flange *b'*. The marginal portion *b'* of the top plate B extends upon and is supported by the frame A. To the lower face of the marginal portion *b'* of the plate B is secured, as at b^2, a valve-box open at its top and comprising in its construction an imperforate end wall C, a slotted or perforated end wall C', a slotted or perforated bottom C^2, and a pair of slotted or perforated side walls C^3. The valve-box extends through the frame A, and the width and length of the said box are such as to form between it and the said frame A a circumferential space D, closed at one end by the marginal portion *b'* of the plate B.

Within the valve-box is located a correspondingly-shaped slidable register-valve composed of a pair of upwardly-extending imperforate ends E E', a slotted or perforated bottom E^2, and a pair of upwardly-extending slotted or perforated sides E^3. The said register-valve is adjustable within the box or valve-seat from the open position (shown in Figs. 1 and 2) to the closed position (shown in Fig. 3) and intermediate, as may be desired, according to the amount of hot air to be conducted to the room that is to be heated.

In practice I adjust the position of register-valve relative to its seat by manipulating a knob or button *e*, secured to any convenient portion of said valve, as shown. The slots or perforations in the bottom of the box or valve-seat register with the slots or perforations in the bottom of the register-valve when the register is open, as shown in Figs. 1 and 2, and when in such open position the slots or perforations in the sides of the register-valve register with the slots or perforations in the sides of the box or valve-seat, as shown in Figs. 1 and 2.

By moving the register-valve to the position shown in Fig. 3 the device will be closed by the imperforate portions of the sides and bottom of the register-valve registering with the corresponding imperforate portions in the side walls and bottom of the box or valve-seat, and when in such closed position the slotted or perforated end C' of the valve-seat is closed by the imperforate end E' of the register-valve, thus preventing any escape of hot air at this point.

It will be noticed that the circumferential space D intermediate the frame A and box or valve-seat is always closed by the marginal portion *b'* of the plate B, and consequently no hot air can at any time escape directly through such space D.

When the register-valve is wholly or partially moved to open position, the heated air passes upward through the slots or perfora-

tions in the bottom of the valve-seat and bottom of the valve and also into the peripheral space D and through the slots or perforations in the side walls of said valve-seat and valve, as well as through the slotted or perforated end wall C′, all as indicated by arrows in Figs. 1 and 2.

By the construction of this my improved device the supply of hot air from the furnace can be regulated with great nicety or altogether shut off, as may be required.

It will be noticed that as the register-valve and its valve-seat are perforated in the bottom as well as in their sides the capacity for supplying hot air to the room is greatly increased as compared with devices of this kind in which the air is only conducted through bottom openings in the register device.

What I wish to secure by Letters Patent and claim is—

1. A hot-air register consisting of a sunken valve-seat having a closed and a perforated end, perforated sides and perforated bottom, combined with a correspondingly-shaped adjustable valve having a perforated bottom and sides and imperforate ends, one of the imperforate ends of the said valve adapted to be seated against the perforated end of the valve-seat.

2. A hot-air register comprising a perforated outer plate having a marginal portion, a valve-box secured to the lower face of said marginal portion and provided with a perforated bottom and perforated side walls, a slide-valve operating in said box and having a perforated bottom and upwardly-extending perforated sides, means for sliding said valve in said box, and a supporting-frame for the said plate, the length and width of said frame being greater than that of the valve-box, so as to form a circumferential opening around the said box, one end of said opening being closed by the marginal portion of said plate.

3. A hot-air register comprising a perforated outer plate having a marginal portion, a valve-box secured to the lower face of said marginal portion and provided with a perforated end, an imperforate end, a perforated bottom and perforated side walls, a slide-valve in said box and having upwardly-extending imperforate ends, perforated bottom and upwardly-extending perforated sides, and means for sliding said valve in said box.

4. A hot-air register comprising a perforated outer plate having a marginal portion, a valve-box secured to the lower face of said marginal portion and provided with a perforated end, an imperforate end, a perforated bottom and perforated side walls, a slide-valve operating in said box and having upwardly-extending imperforate ends, perforated bottom and upwardly-extending perforated sides, means for sliding said valve in said box, and a supporting-frame for the said plate, the length and width of said frame being greater than that of the box so as to form a circumferential opening around the box, one end of said opening being closed by the marginal portion of said plate.

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

JOSEPH G. LLOYD.

Witnesses:
ALBAN ANDRÉN,
WILLARD B. ELLISON.