

E. A. TUTTLE.
Hot-Air Registers.

No. 148,337.

Patented March 10, 1874.

Fig. 1.

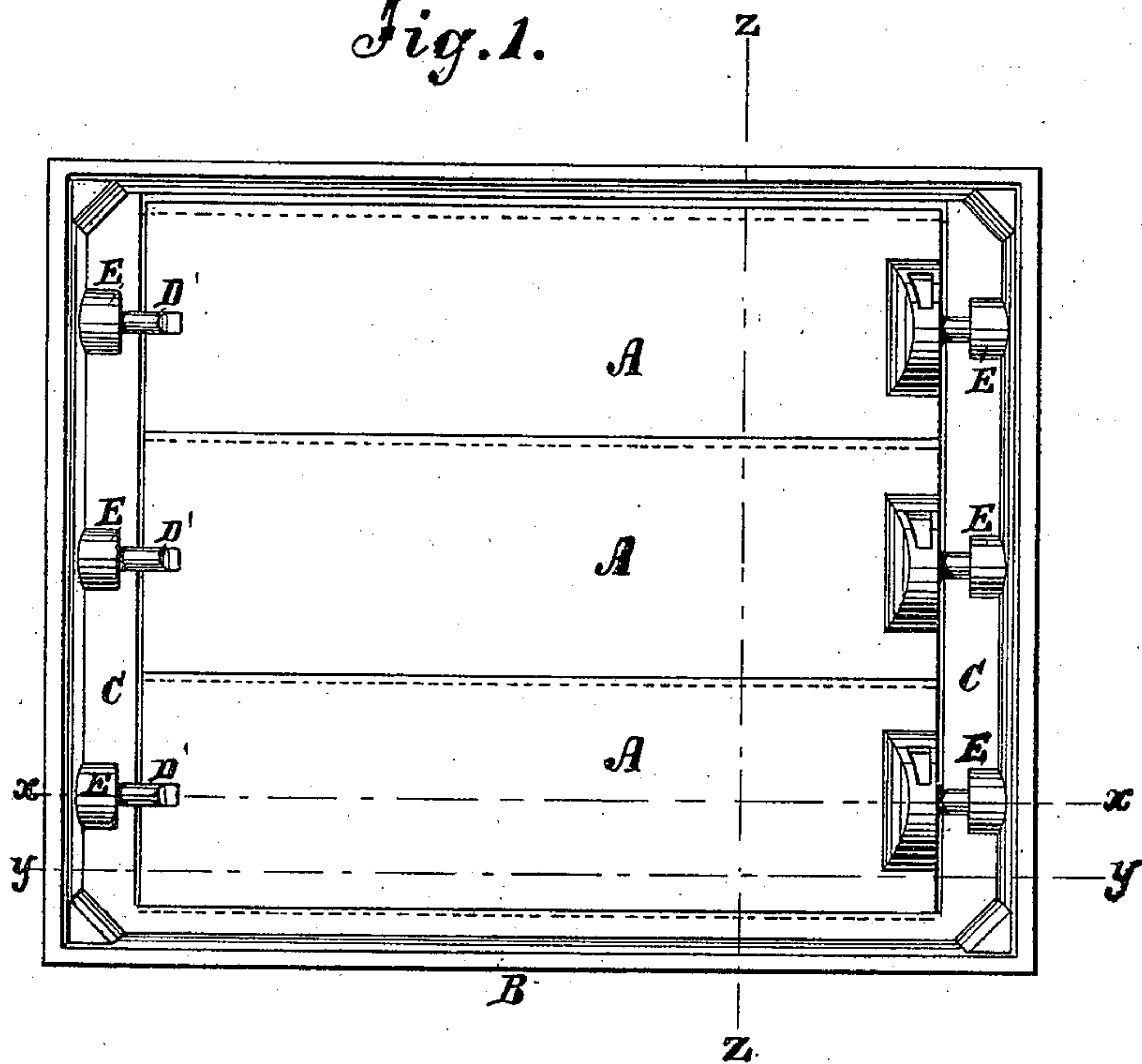


Fig. 4.

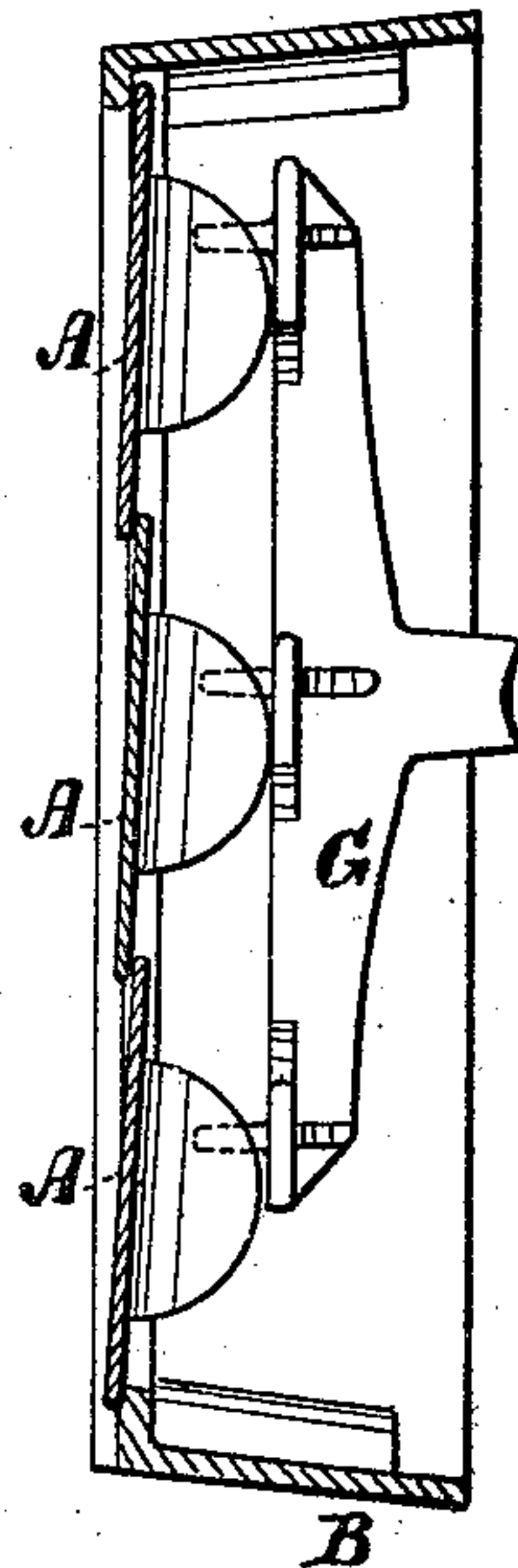


Fig. 2.

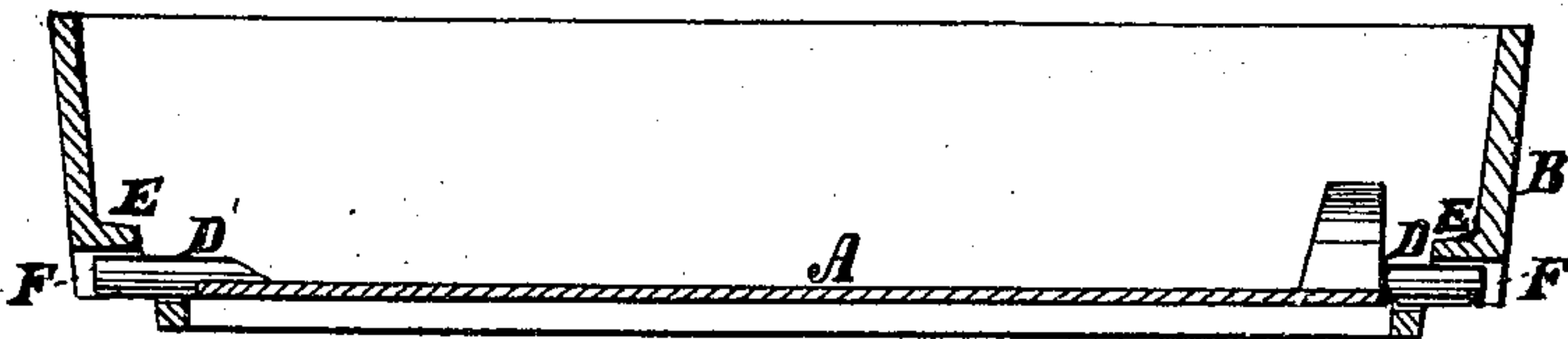
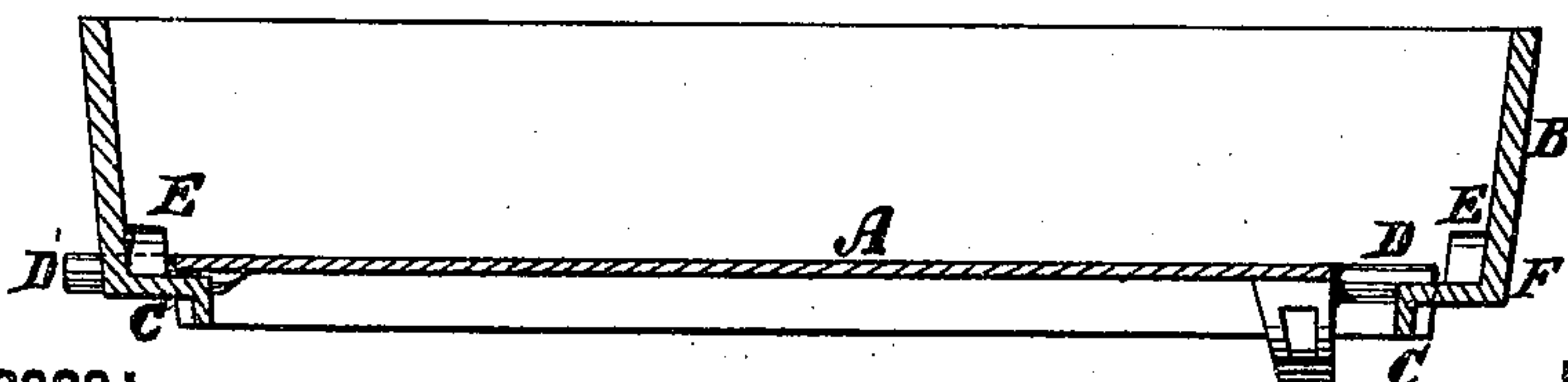


Fig. 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

EDWARD A. TUTTLE, OF MORRISTOWN, NEW JERSEY.

IMPROVEMENT IN HOT-AIR REGISTERS.

Specification forming part of Letters Patent No. **148,337**, dated March 10, 1874; application filed April 19, 1873.

To all whom it may concern:

Be it known that I, EDWARD A. TUTTLE, of Morristown, county of Morris and State of New Jersey, have invented a new and useful Improvement in Register-Valves, of which the following is a specification:

This invention relates to the construction of register-valves for hot air and other purposes; and it consists in the mode of attaching and confining the slats of the valve in the frame of the register, hereinafter described.

In the accompanying drawing, Figure 1 is a plan view, showing the valve closed. Fig. 2 is a section of Fig. 1, taken on the line *x x*, showing one of the slats as in place or face side up. Fig. 3 is also a section on the line *y y* of Fig. 1, showing the slat the other side up and slipped endwise, as when being put in or removed from the frame. Fig. 4 is a cross-section of Fig. 1 on the line *z z*, showing the bar by means of which the slats are opened and closed or adjusted.

Similar letters of reference indicate corresponding parts.

This valve consists of one or more slats, A, hung on pivots in the frame B, so that they will open and close and operate similar to the slats of a window-blind.

The ordinary mode is to confine the slats in the frame by means of one or more separate pieces of casting attached by means of screws or otherwise. The slats of such a damper cannot be put in or taken out until such fastening-pieces are removed.

The pivot D' of each slat has a large portion of its body extending above the upper part of the slat A, and the lower portion on a level with the subjacent face thereof. The slat A comes against the cap E, which projects semicircularly over the end of the pivot whenever the valve is in working position; but when the slat is turned a half-revolution it comes below the cap and may be readily removed.

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

The slat A, made with pivot D' above the upper and even with the lower face thereof, to enable it, when reversed, to be withdrawn from the superposed semicircular projecting cap E, as set forth.

EDWARD A. TUTTLE.

Witnesses:

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