

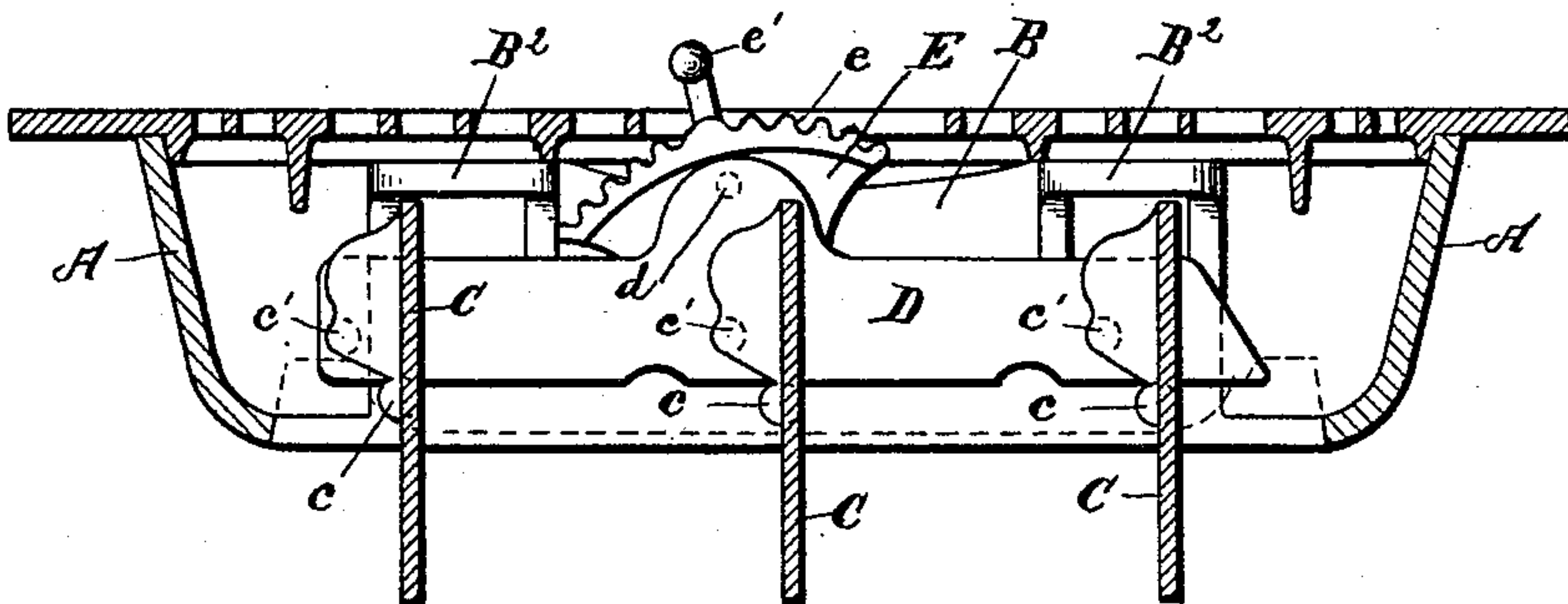
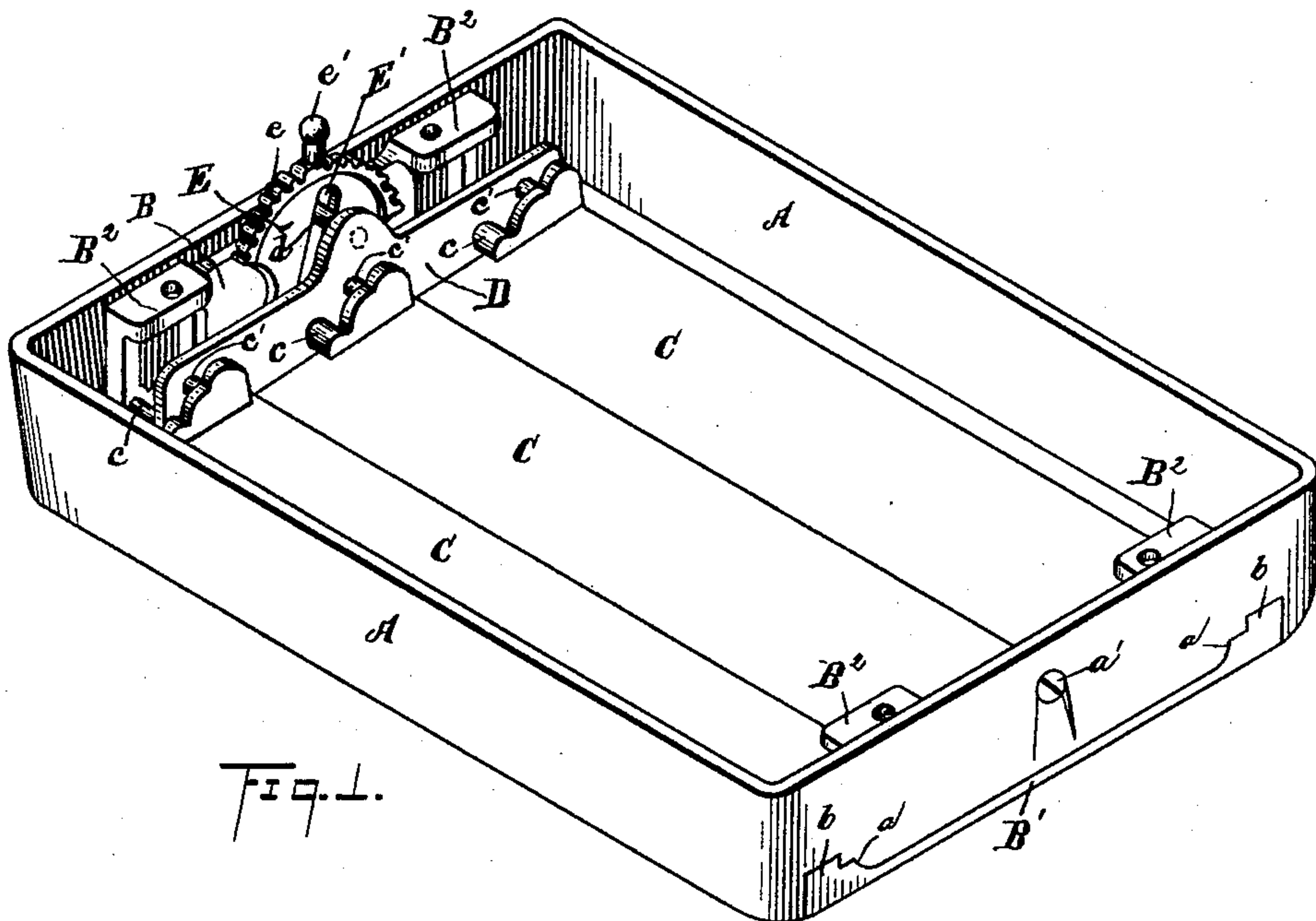
(No Model.)

2 Sheets—Sheet 1.

F. BURMEISTER.  
HOT AIR REGISTER.

No. 435,391.

Patented Sept. 2, 1890.



Witnesses

Wm. L. Laurie  
C. H. Davis

Inventor

Frederick Burmeister  
Laggett and Laggett  
Attorneys.

(No Model.)

2 Sheets—Sheet 2.

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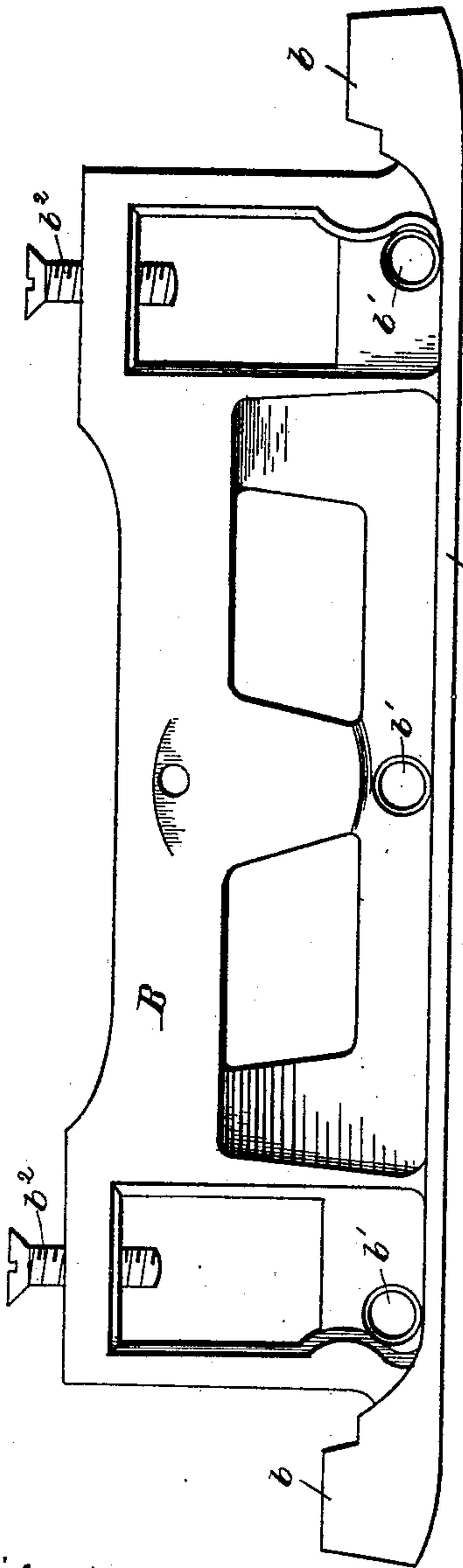


Fig. 3.

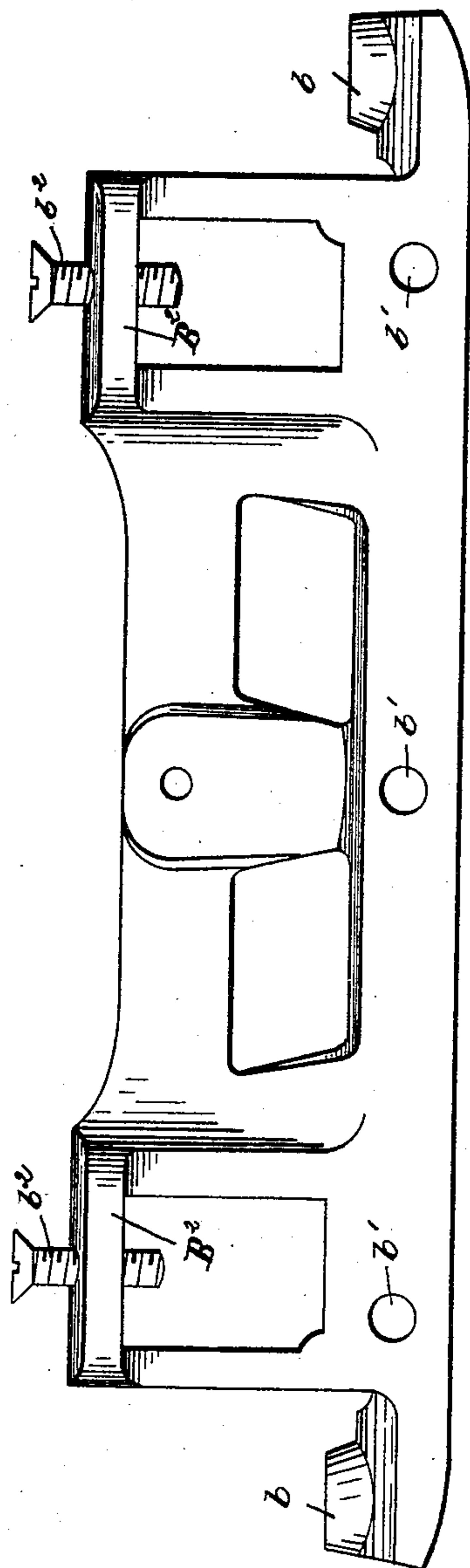


Fig. 4.

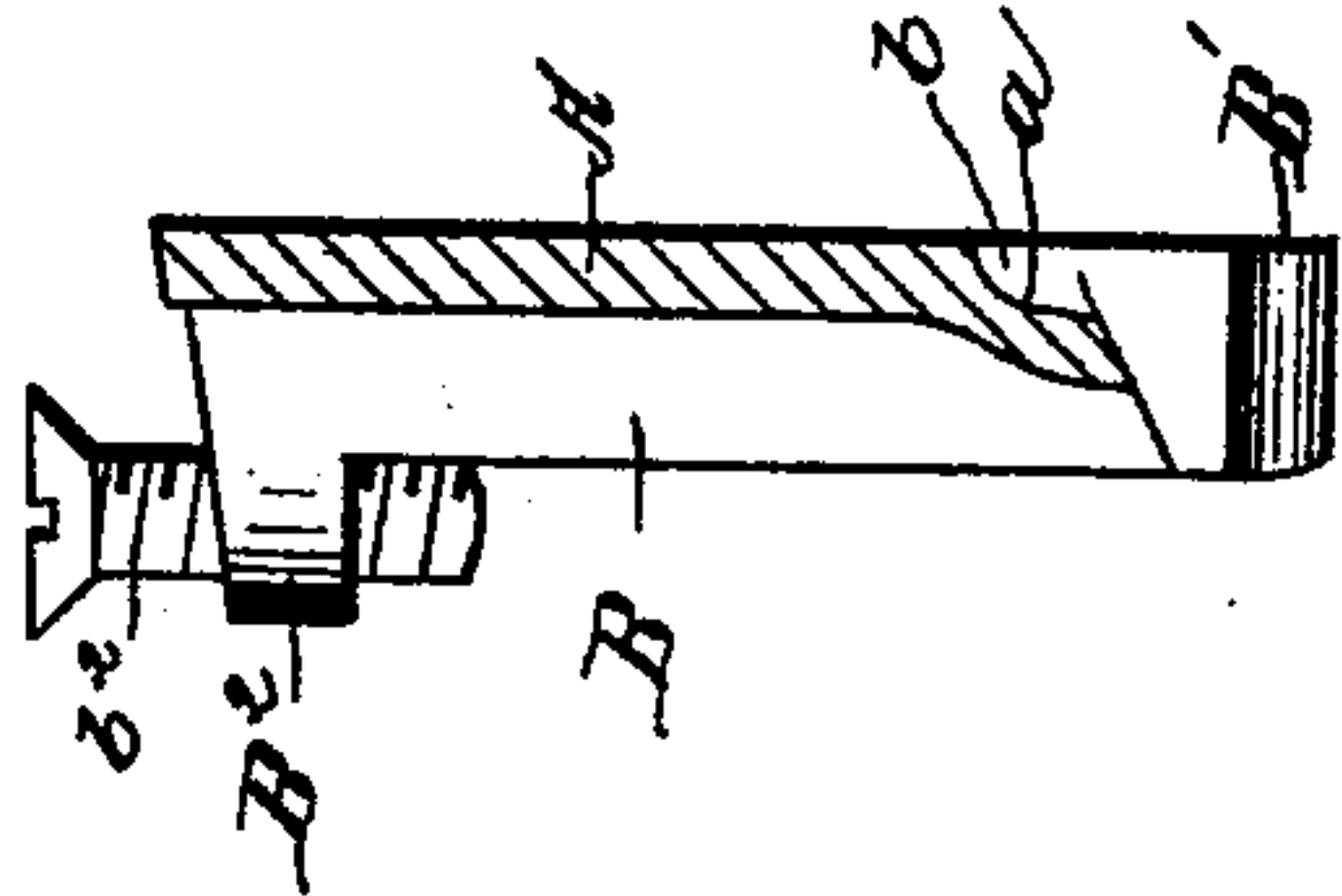


Fig. 5.

Witnesses.  
Belle S. Lounie  
C. H. Lounie

Inventor.  
Frederick Burmeister  
Leggett and Leggett.  
Attorneys.



# UNITED STATES PATENT OFFICE.

FREDERICK BURMEISTER, OF CLEVELAND, OHIO, ASSIGNOR TO F. E. DRURY,  
OF SAME PLACE, AND H. P. CROWELL, OF CHICAGO, ILLINOIS.

## HOT-AIR REGISTER.

SPECIFICATION forming part of Letters Patent No. 435,391, dated September 2, 1890.

Application filed May 29, 1890. Serial No. 353,593. (No model.)

*To all whom it may concern:*

Be it known that I, FREDERICK BURMEISTER, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Hot-Air Registers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

My invention relates to improvements in hot-air registers; and it consists in certain features of construction and in combination of parts hereinafter described, and pointed out in the claims, the object being to improve the construction and to lessen the initial cost of the register.

In the accompanying drawings, Figure 1 is a view in perspective with the grating removed. Fig. 2 is a transverse section showing the register open. Figs. 3 and 4 are elevations showing the reverse sides of the detachable end plate, and Fig 5 is an end elevation of the same.

A represents the supporting-frame, usually rectangular in plan, as shown, and slightly flaring upward.

B B are thin detachable metal end plates located in the main on the inside of the frame. The lower edges of members B have outwardly-projecting flanges B', that extend under the lower edge of the frame, the latter being cut away to receive these flanges, so that the frame and members B are flush along the bottom and outer faces of the frame. The end sections of the frame, near the corners thereof on the external faces thereof, are depressed at *a* for receiving the upturned ears *b* of members B. Hence the latter by embracing the frame at these points are held in place laterally by a single screw *a'*, which is sufficient to secure each plate B in position. Plates B are provided each with a series of holes *b'* near the lower edge thereof and on their inner faces for receiving, respectively, trunnions *c* of slats or shutters C. Members B at the top have inwardly-projecting ears B<sup>2</sup>, these ears being pierced vertically and the holes screw-threaded for receiving

screws *b*<sup>2</sup>, that secure the grating or fret-work. (Not shown.) The shutters at the one end thereof and to the one side of their axes are provided with pins or lugs *c'*, extending lengthwise the shutters, on which is mounted the shifting-bar D, this bar having a series of lateral holes adapted to receive with an easy fit lugs or pins *c'*.

E is a segmental lever fulcrumed on trunnion *c* of the central shutter. This lever has a radial slot E', in which operates a laterally-projecting pin *d* of the shifting-bar. The segmental face of lever E is serrated at *e*, so that it may be operated with the foot, and this face is supposed to extend flush with or slightly above the grating; also, is usually provided a removable pin *e'* for operating with the foot or with the fingers, this being usually omitted, except where the register is so near the side of the room that the pin is out of the way, so that it will not be trod upon. By oscillating lever E the shutters are opened or closed. It will be observed that little or no fitting is required, except the drilling of such holes as cannot well be cored and the screw-threading of such holes as require it, and that such drilling and screw-threading are incident to manufacturing about every variety of hot-air registers.

What I claim is—

In hot-air registers, the combination, with a supporting-frame, substantially as indicated, of detachable end plates for pivotally supporting the shutters, such end plates being adapted to fit inside the frame and having flanges adapted to extend underneath the lower edge of the frame, with upturned ears adapted to engage the outer face of the frame, the end plates being flush with the frame along the bottom and outer sides thereof, substantially as set forth.

In testimony whereof I sign this specification, in the presence of two witnesses, this 30th day of April, 1890.

FREDERICK BURMEISTER.

Witnesses:

CHAS. H. DORER,  
WARD HOOVER.