

(No Model.)

L. C. BYCE.  
CHICKEN BROODER.

No. 395,876.

Patented Jan. 8, 1889.

Fig. 1.

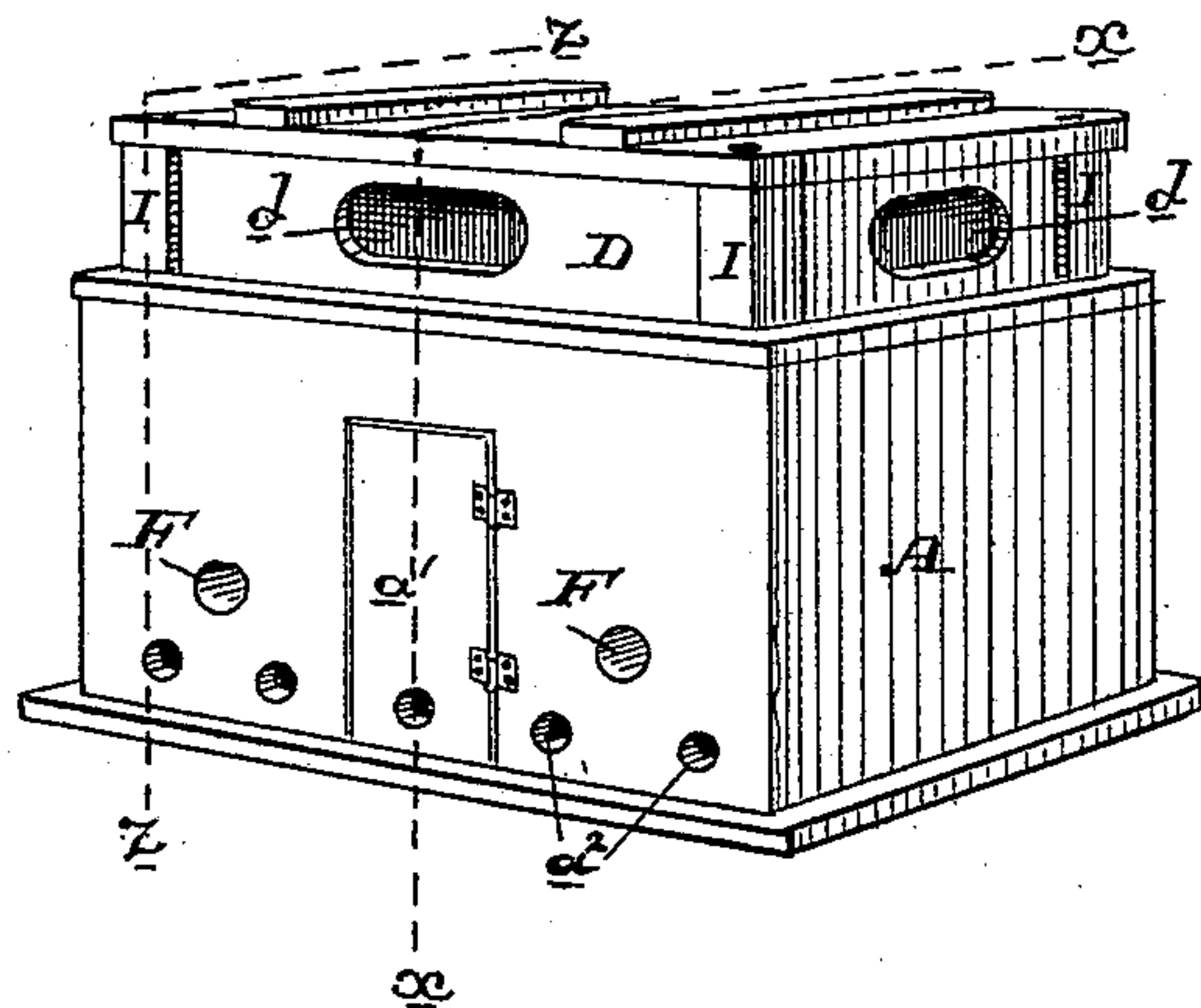


Fig. 2.

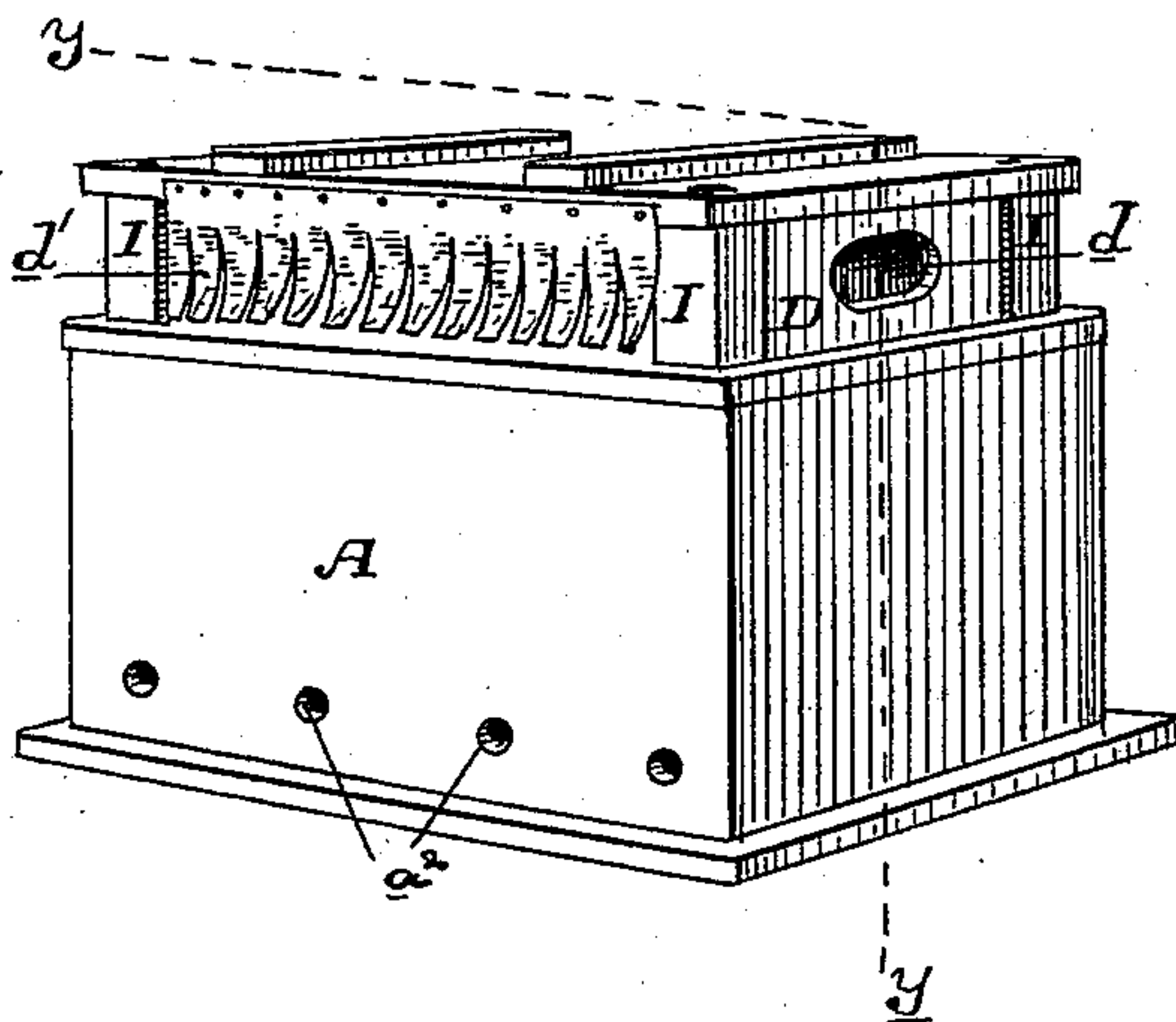


Fig. 3.

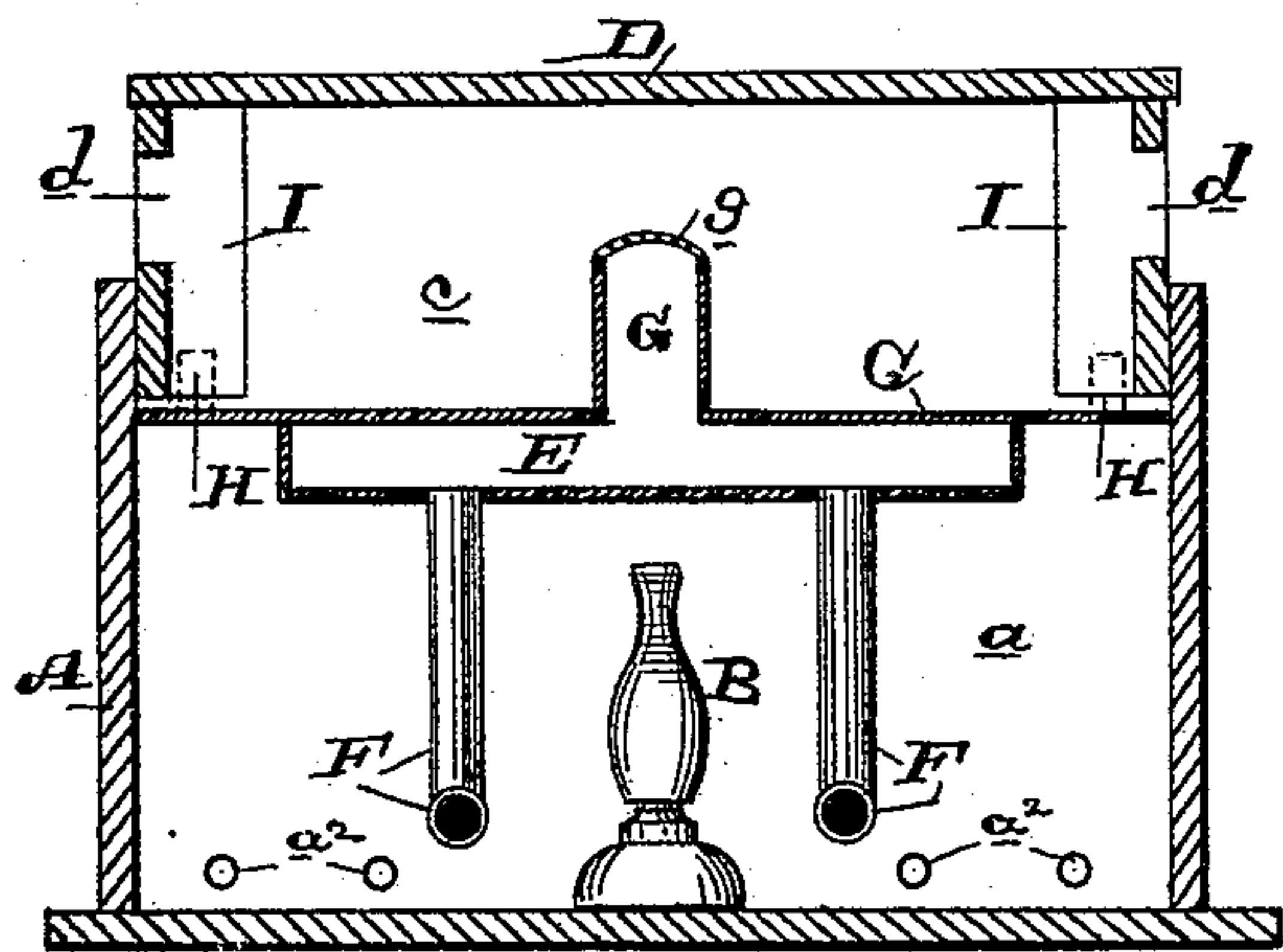


Fig. 4.

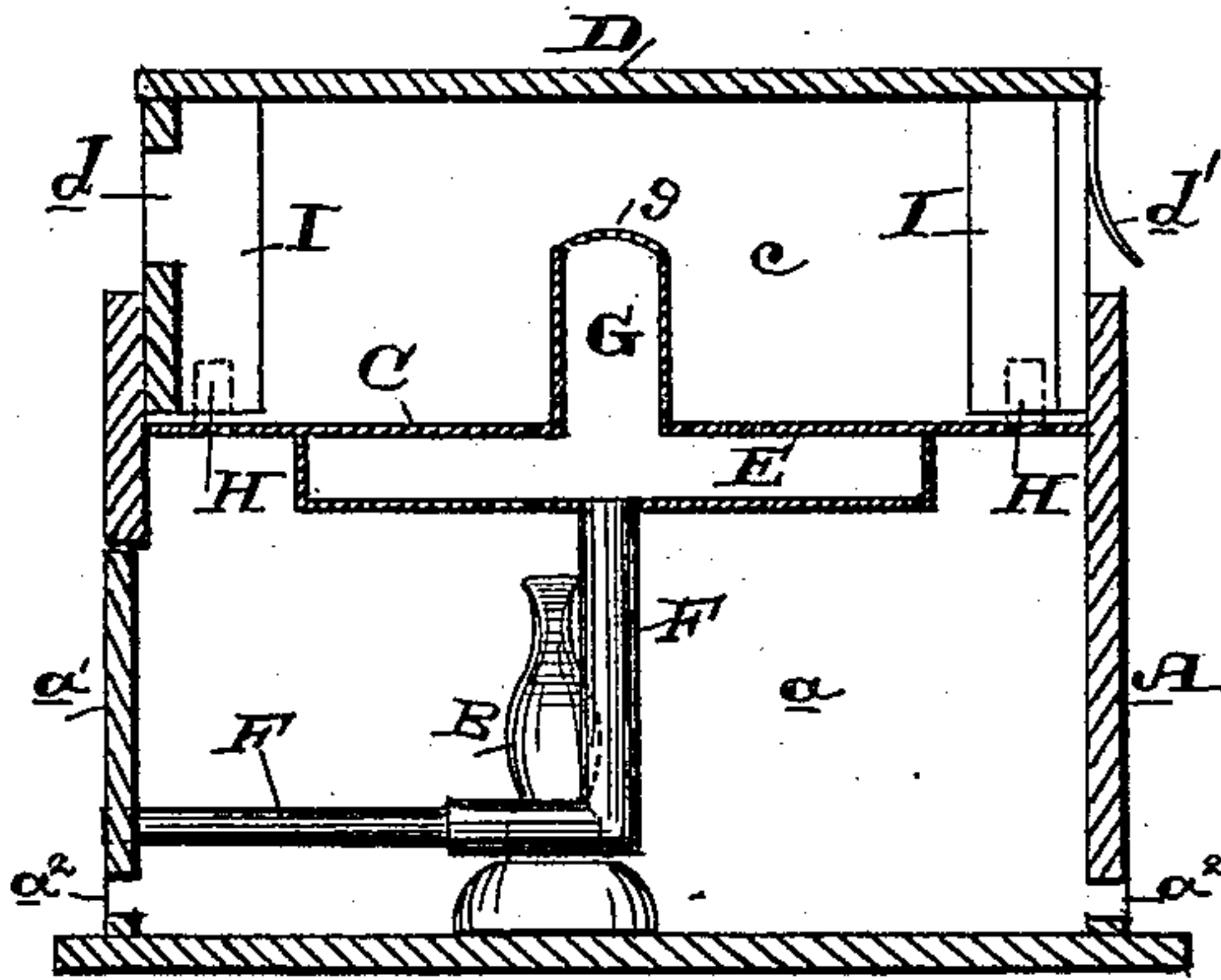
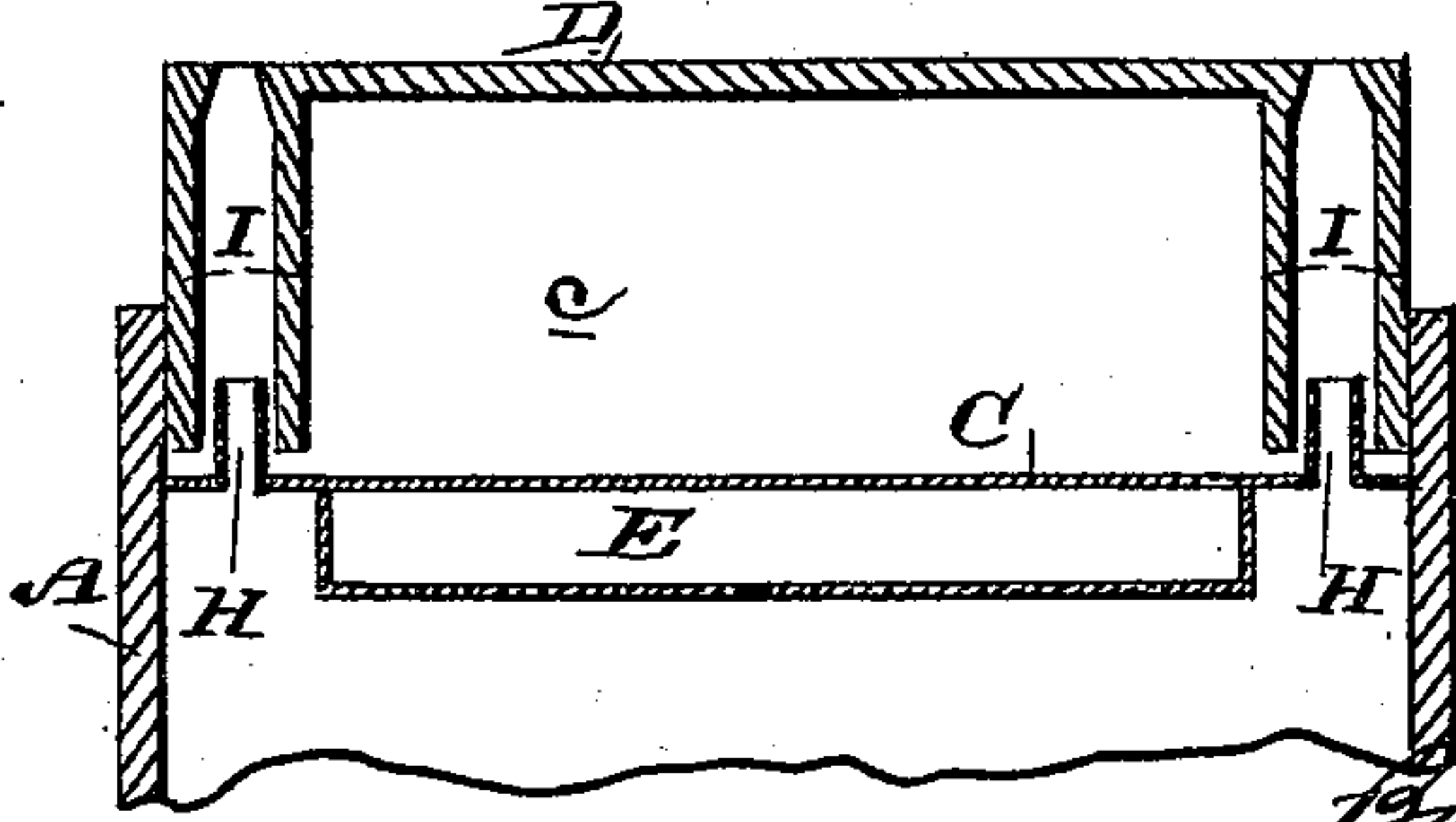


Fig. 5.



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# UNITED STATES PATENT OFFICE.

LYMAN C. BYCE, OF PETALUMA, CALIFORNIA.

## CHICKEN-BROODER.

SPECIFICATION forming part of Letters Patent No. 395,876, dated January 8, 1889.

Application filed August 10, 1888. Serial No. 282,470. (No model.)

*To all whom it may concern:*

Be it known that I, LYMAN C. BYCE, of Petaluma, Sonoma county, State of California, have invented an Improvement in Brooders; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to the class of brooders or artificial mothers for chicks; and my invention consists in the novel arrangement of the heating-chamber, the air-chamber, and the chick or living chamber, and the air passages and flues, all of which I shall hereinafter fully describe.

The object of my invention is to provide a simple and thoroughly effective brooder in which there shall be an equal distribution of the heat, so that all portions of the floor of the chick-chamber shall be uniformly heated and the products of combustion disposed of to the best advantage.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is a front view of my brooder. Fig. 2 is a back view. Fig. 3 is a vertical section on line *y y*, Fig. 2. Fig. 4 is a vertical section on line *x x*, Fig. 1. Fig. 5 is a vertical section on line *z z*, Fig. 1.

A is the main box or case of the brooder, and which forms and incloses the heating-chamber. (Represented by *a*.) This box has a door, *a'*, by which a lamp, B, may be conveniently introduced, and it is also provided with ventilating-apertures *a''* for furnishing air to the lamp.

In the upper portion of the box A is fixed a galvanized-iron plate, C, which forms the floor of the living or chick chamber *c*, said chamber being completed by the upper box, D, which is provided with the usual sight-apertures, *d*, and the strip of fabric *d'*, with cut edge in the usual form for the entrance of the chicks. Under the galvanized plate C is formed an air-chamber, E, made also of galvanized iron.

F are air-inlet pipes which open out through the box A and extend into the heating-chamber and on each side of the lamp, their upper ends being let into and communicating with the air-chamber E.

G is a centrally-located air-supply pipe, which opens downwardly through the galvanized-iron plate C and communicates with the

air-chamber E, its upper end opening out into the chick-chamber and protected by a cover of wire-net, *g*. The air-chamber E does not extend quite to the edges of the floor-plate C, to which it is attached, thus leaving at the edges of said plate but a single thickness of metal, through which thickness are let the short corner pipes or flues H. Over the flues fit the corner-posts I of the upper box, D, said corner-posts being made hollow and serving as flues communicating with the outer air.

The operation of the device is as follows: The gases and products of combustion from the lamp, striking upward against the center of the bottom of the air-chamber E, separate outwardly in all directions and to all sides, seeking the flues H at the corners, through which they pass, and through the corner-posts I escaping into the outer air. Fresh air is admitted through the pipes F and is partially heated in said pipes by passing through the heating-chamber, said air being more fully and completely heated within the air-chamber E, with which the pipes communicate, and the air in a heated condition passes through the central supply-pipe, G, into the chick-chamber. It will be seen that the heat is equally distributed over the bottom of the chick-chamber, because the products of combustion must pass outwardly to the corners of the floor-plate C in seeking to escape, and the corners of the floor-plate are thereby kept warm and have about the same temperature as other portions of the plate, for the reason that at the edges there is but a single thickness of plate, while at the other portions there is a double thickness due to the air-chamber E, so that although the heat strikes the center first that portion is not heated any more than the edges and corners. The diversion of the products of combustion in all directions to the four corners provides for the most perfect utilization during their course to the outlets, and the pure air itself is heated and kept heated in a thorough and satisfactory manner.

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

1. In a brooder, a heating-chamber, a chick-chamber above, and a floor-plate separating the two, in combination with the air-chamber

under said floor and terminating short of its edges, fresh-air pipes communicating with the outer air and with said air-chamber, said pipes passing through the heating-chamber, a supply-pipe let through the floor-plate and communicating with the center of the air-chamber below and the chick-chamber above, and escape-flues for the products of combustion from the heating-chamber located within the corner-posts of the upper box and passing through the chick-chamber, substantially as herein described.

2. In a brooder, the combination of the main box forming the heating-chamber, the floor-plate in the top of said box, the upper box forming the chick-chamber and having perforated or hollow corner-posts, the short flues in the corners of the floor-plate and connecting the heating-chamber with the hollow corner-posts of the upper box, whereby the products of combustion escape, and fresh-air pipes for supplying the chick-chamber, substantially as herein described.

3. In a brooder, the combination of the main box forming the heating-chamber, the floor-plate in its top having the short flues at its corners communicating with the heating-chamber, the upper box set upon the floor-plate and forming the chick-chamber, said box having hollow corner-posts fitting over the short flues, the air-chamber on the bottom of the floor-plate, the fresh-air pipes communicating with the outer air and with said air-chamber and passing through the heating-chamber, and the supply-pipe connecting the air-chamber with the chick-chamber, substantially as herein described.

In witness whereof I have hereunto set my hand.

LYMAN C. BYCE.

Witnesses:

T. J. HASKINS,  
M. D. GOSHEN.