

(No Model.)

F. BIVEN.
INCUBATOR.

No. 369,682.

Patented Sept. 13, 1887.

Fig. 1.

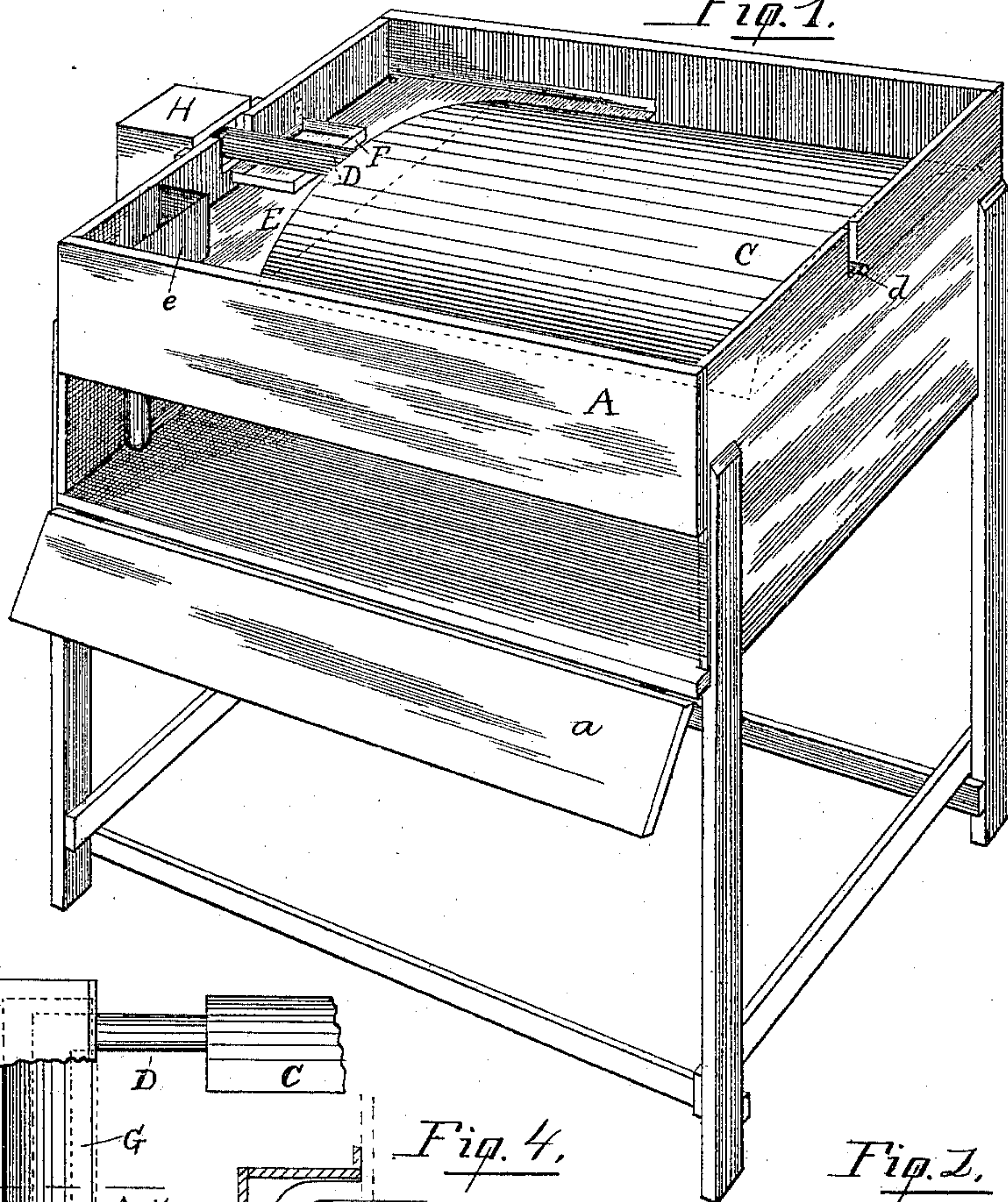


Fig. 3.

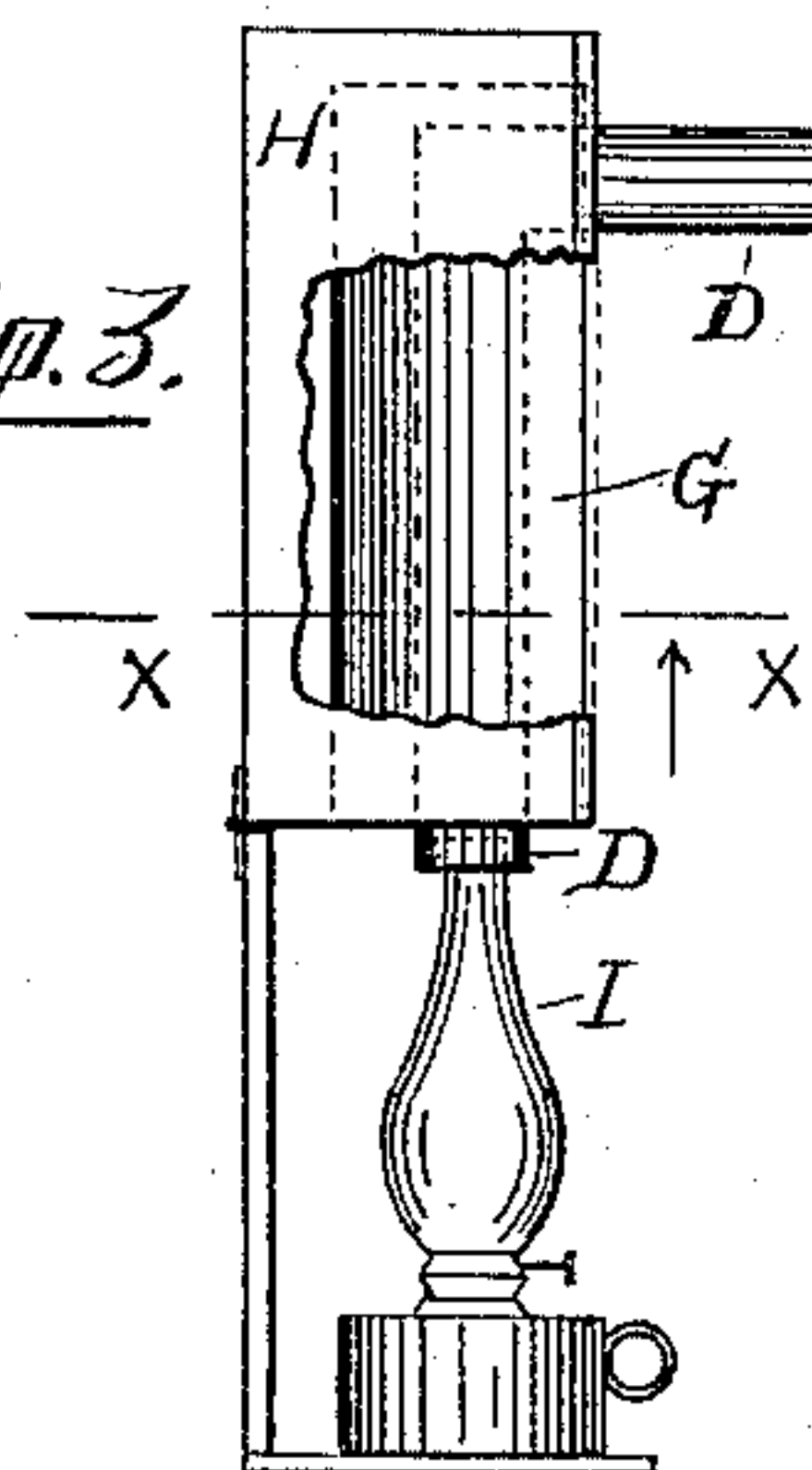


Fig. 4.

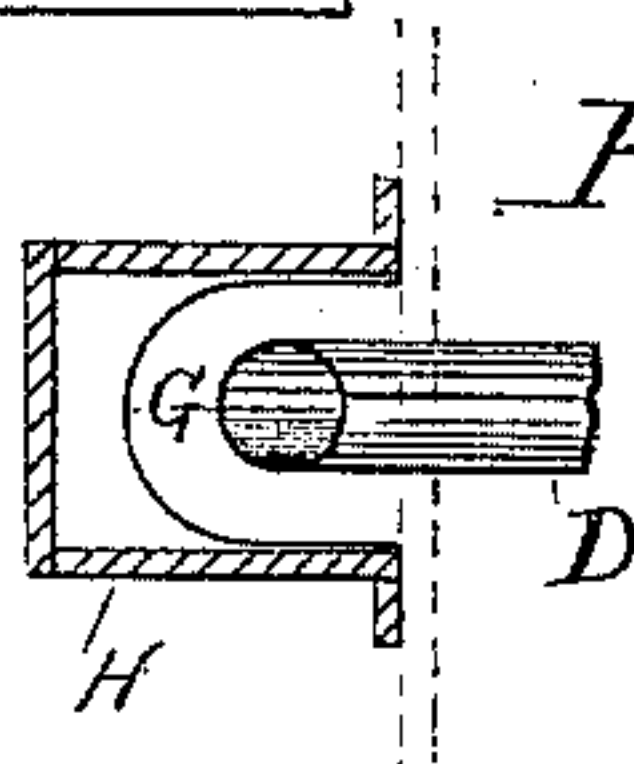
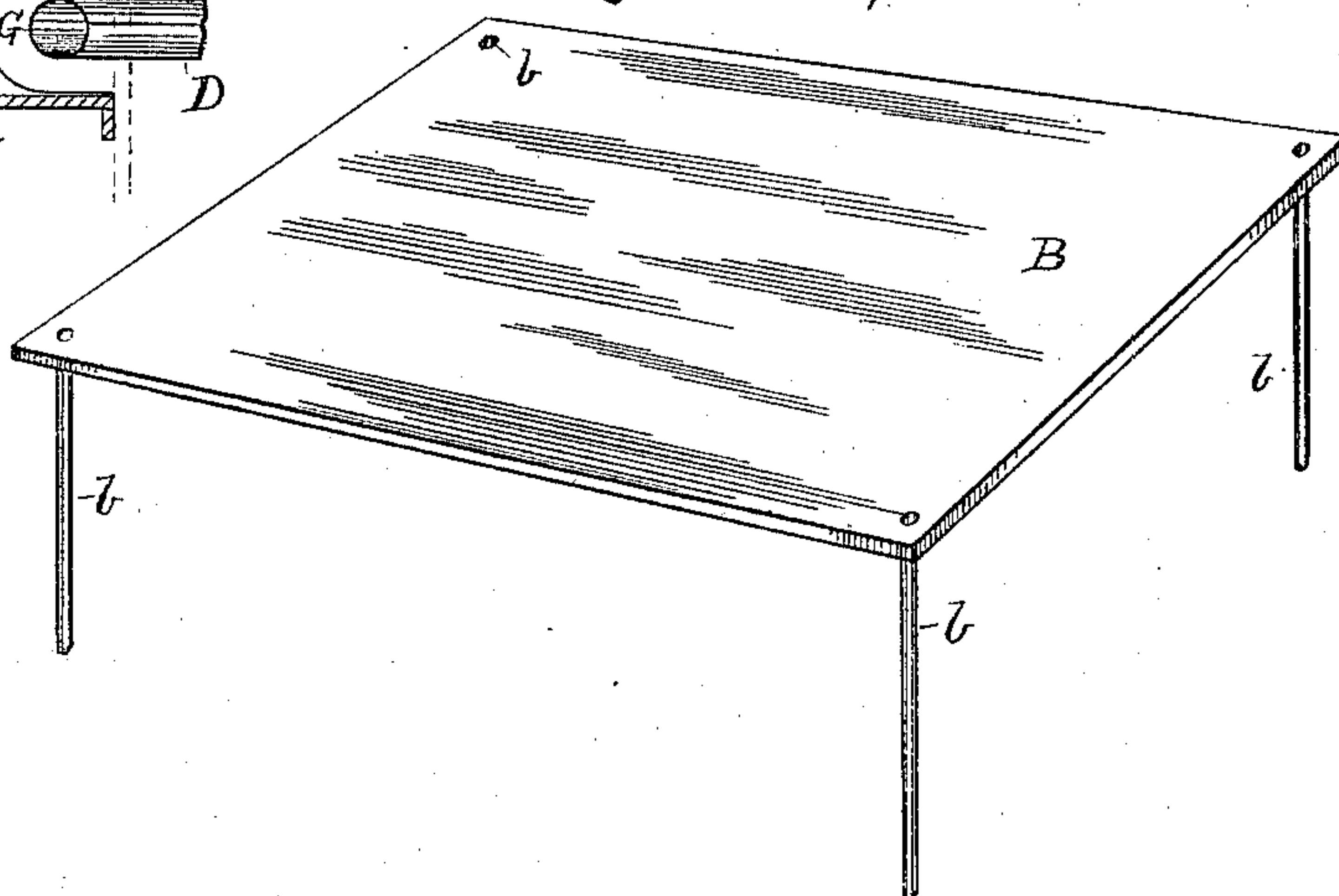


Fig. 2.



Witnesses,
Elihu B. Stowe,
Chas. H. Wyman

Inventor,
Frederick Biven.
By Joshua B. Webster Atty.

UNITED STATES PATENT OFFICE.

FREDERICK BIVEN, OF STOCKTON, CALIFORNIA, ASSIGNOR OF TWO-THIRDS
TO CHAS. C. MOORE AND HENRY H. MOORE, BOTH OF SAME PLACE.

INCUBATOR.

SPECIFICATION forming part of Letters Patent No. 369,682, dated September 13, 1887.

Application filed January 7, 1887. Serial No. 223,696. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK BIVEN, a citizen of the United States, residing at Stockton, in the county of San Joaquin and State of California, have invented certain new and useful Improvements in Incubators; and I do 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 appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to incubators for the artificial hatching of eggs; and it consists in a novel heating apparatus, ventilating-tubes, and a self egg-moistener, and in such other devices as will be described in the specification and pointed out in the claims.

To more properly explain my invention reference is had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a perspective view of the incubator with the cover removed. Fig. 2 is a detached view of the cover and ventilating-tubes. Fig. 3 is an elevation of the heating-lamp and a portion of the heating apparatus. Fig. 4 is a section of the same through line *x x*, Fig. 3.

Similar letters of reference indicate corresponding parts.

The incubator-chest A is mounted upon suitable legs, and is supplied with a side door, *a*. The eggs, arranged in suitable trays, are placed upon the bottom of the chest A, the door *a* being opened for such purpose. The heat is supplied from a lamp, I, the chimney of which is inserted in an angular tube, D, the vertical portion of which and the lamp I are outside the box A, while the horizontal section above the box A is attached to and discharges into an oval top heating-chamber, C, which is located just beneath the removable cover B of the chest A. The chamber C is supplied with an escape-pipe, *d*. The pipes *d* and D also serve to support the chamber C in its position. At each corner of the cover B is a ventilating-tube, *b*, which, when the cover is placed upon the chest A, is distant about an inch from the floor of the chest, thus insuring

a free supply of pure air and permitting the escape of all foul gases, &c.

The heat, when it first reaches the chest A, is equalized and evenly distributed by means of a horizontal deflector, E, constructed of sheet-tin and attached to the inside of the chest A, just below the tube D. In one corner of the deflector E, I provide an opening, which is shut off from the chest A by an angular strip of tin, *e*, on one side and end, so that no heat passes downward.

In the inclosure formed as above described is located the tube of a heat-regulator of any desired style, but preferably that shown in Letters Patent No. 323,556, granted to me August 4, 1885.

To insure a proper moisture, a water-pan, F, is attached to the side of the chest A, just beneath the horizontal section of tube D. A tin tube, G, encircles the vertical portion of tube D, and has an open lower end, permitting the free circulation of air in it and about the tube D. The tube G is inclosed by a wooden box, H, to prevent the cold air from coming in contact with the outside of tube G. All the tubes and hot-air chamber are constructed of sheet-tin.

By means of the above-described devices I am enabled to furnish an incubator with a supply of properly-moist air and diffuse it equally over the eggs and insure perfect ventilation, so that the eggs are hatched in one or two days' less time than nature requires.

I am aware that it is not new to provide a heating-chamber in the upper portion of an incubator and the cover with depending ventilating tubes or pipes, and that water-evaporating pans have also been used.

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

1. In an incubator, the combination, with the chest provided with a hinged door and a removable cover having air-tubes at its corners, of the arched heater having pipes D *d*, a shield, H, and a lamp, and the horizontal deflector E, extending partly beneath said heater, substantially as and for the purposes described.

2. The combination, with the chest A and its removable cover provided with air-circulating tubes *b*, depending from it to points near the bottom of the incubating-apartment, 5 of a heater, C, provided with hot-air inlet and outlet pipes, the shield H and G, for the vertical portion of pipe D, and the horizontal deflector E, extending beneath the horizontal

portion of pipe D and the said heater C, substantially as described. 10

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

FREDERICK BIVEN.

Witnesses:

ROBT. W. KING,
ELIHU B. STOWE.