

(No Model.)

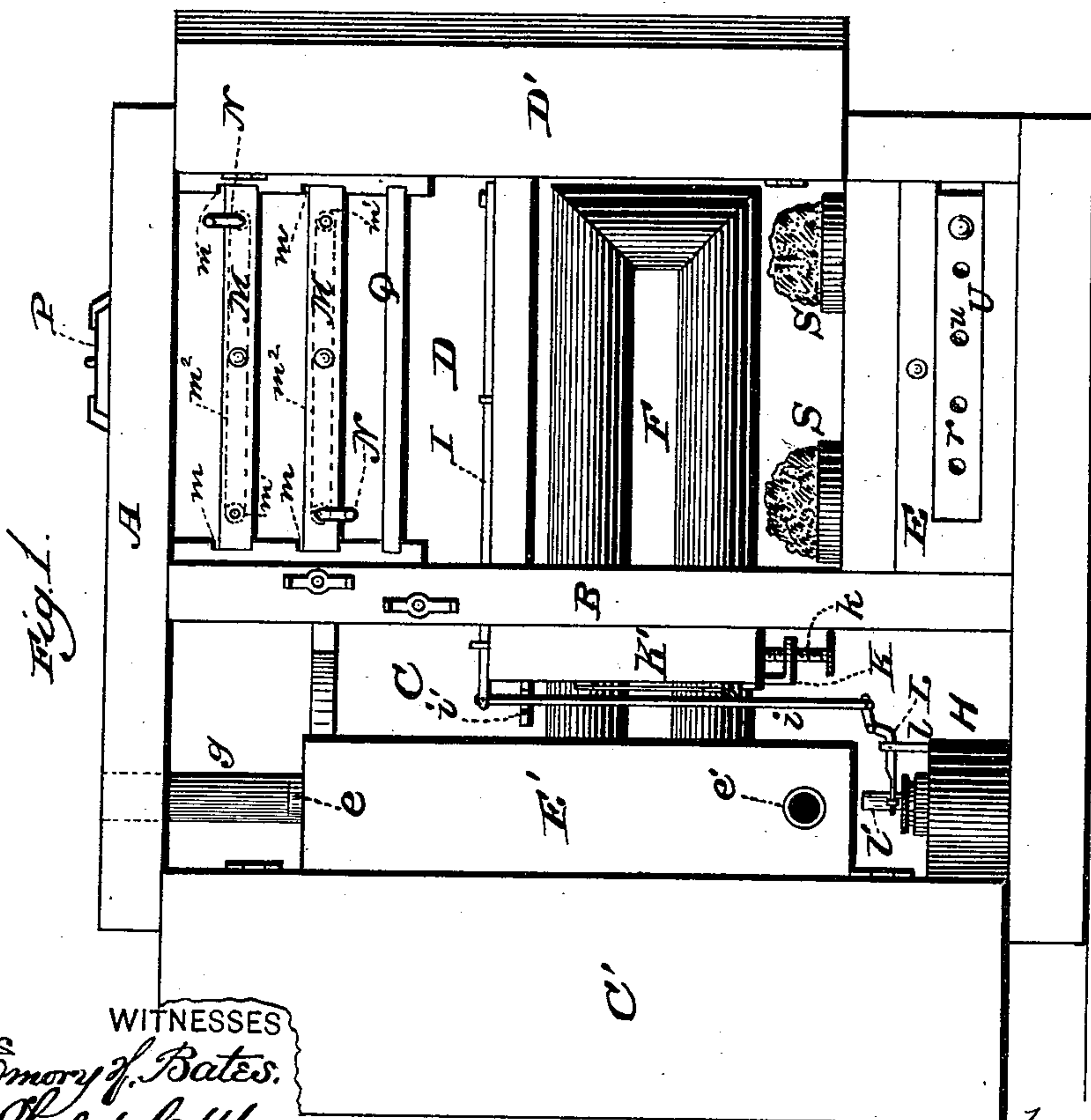
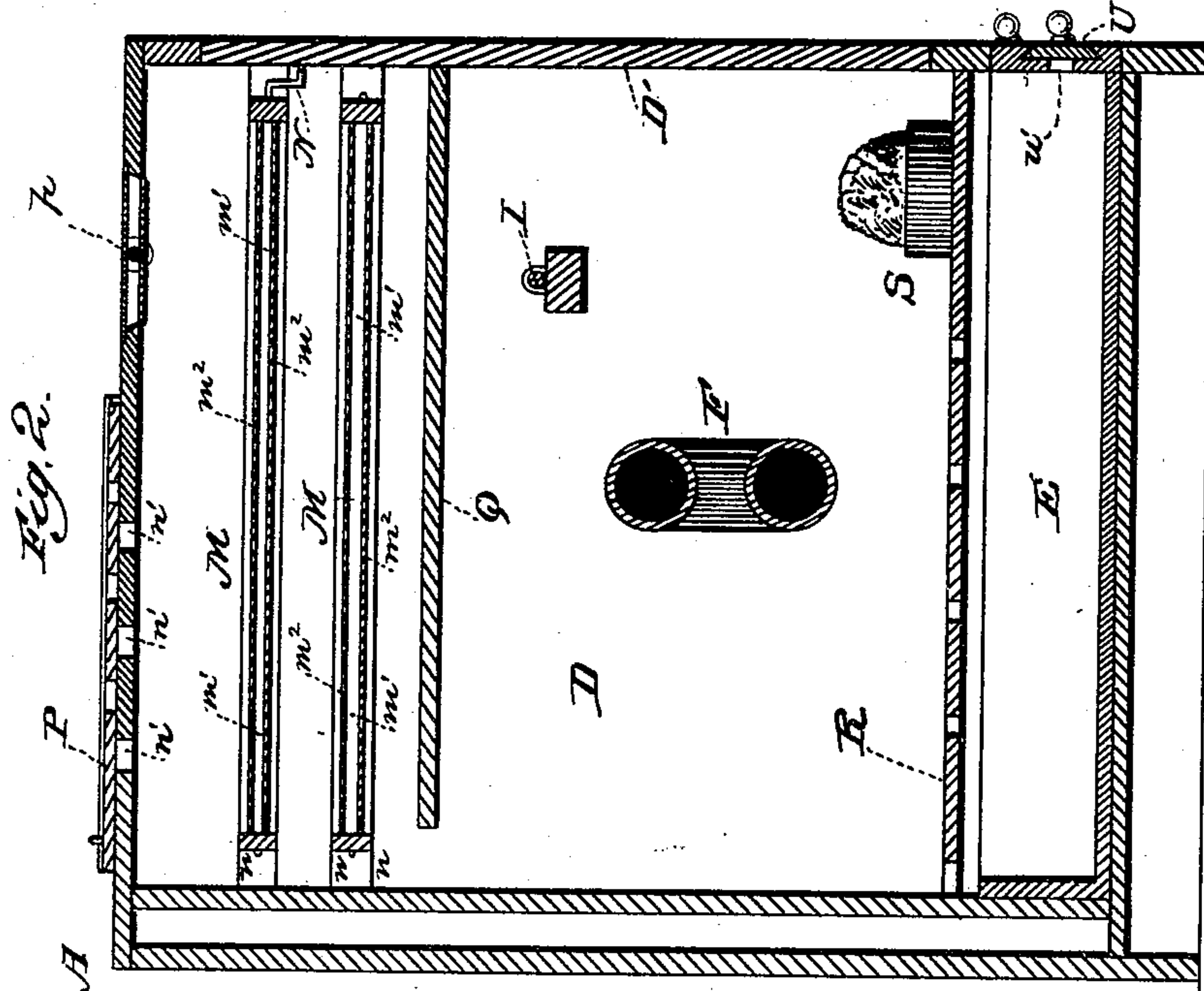
2 Sheets—Sheet 1.

A. H. MORGAN.

INCUBATOR.

No. 272,744.

Patented Feb. 20, 1883.



WITNESSES  
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Philip C. Massi.

INVENTOR  
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by Anderson & Smith  
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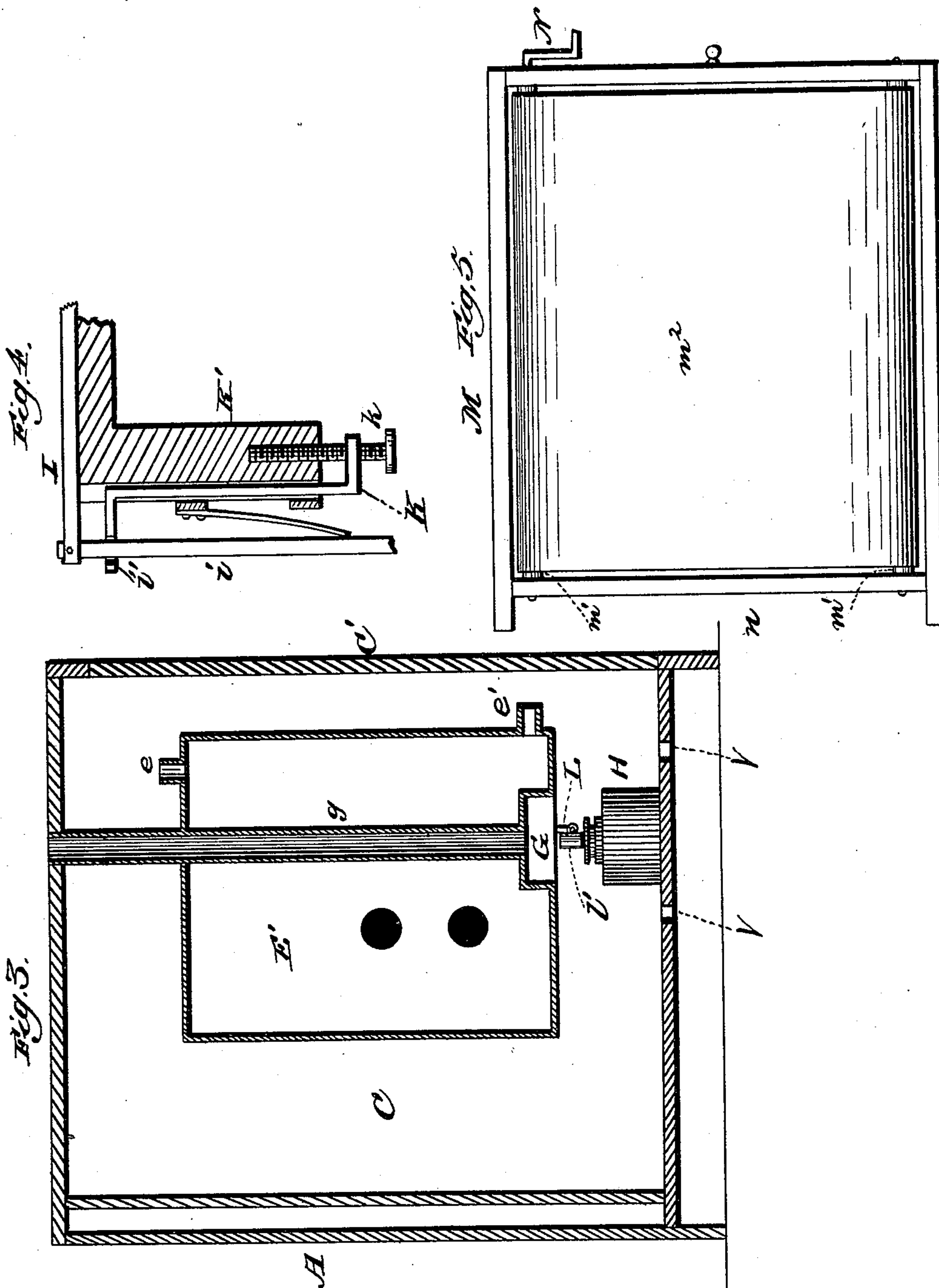
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# UNITED STATES PATENT OFFICE.

ALBERT H. MORGAN, OF CRESTON, IOWA, ASSIGNOR OF TWO-THIRDS TO  
JOSEPH E. BOYELS AND WILLIAM F. MORGAN, OF SAME PLACE.

## INCUBATOR.

SPECIFICATION forming part of Letters Patent No. 272,744, dated February 20, 1883.

Application filed July 8, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, ALBERT H. MORGAN, a citizen of the United States, and a resident of Creston, in the county of Union and State of Iowa, have invented a new and valuable Improvement in Incubators; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a front view of my incubator with the doors open. Fig. 2 is a cross-sectional view of the same, taken through the hatching-chamber D. Fig. 3 is also a cross-section, taken through the reservoir and chamber C. Fig. 4 is a detail view of the parts K' K enlarged, and Fig. 5 is a plan view of one of the shelves.

This invention has relation to incubators; and it consists in the construction and novel arrangement of parts, as will be hereinafter fully described, and particularly pointed out in the claims appended.

The casing A is made double-walled, so as to leave an air-space between its walls, and it is divided by a vertical partition, B, into two general compartments, one of which, C, contains the water-reservoir and lamp and a portion of the temperature-regulating mechanism, while the remaining compartment, D, constitutes the incubating-chamber, which latter is subdivided near its bottom, so as to afford a compartment for the drawer E, in which latter the chickens can be placed as soon as hatched. The lamp and water-reservoir chamber C is closed by a door, C', and the incubating-chamber D is closed by a separate door, D'.

The heating apparatus consists of a reservoir or receptacle, E', for water, provided at the top with an inlet, e, and at one side, near its bottom, with an outlet, e'. The water-pipe F, for heating the incubating chamber, leads from the water-receptacle into the said chamber and then returns to the water-receptacle, so that a constant circulation of heated water will be maintained through the pipe. The casing of this water-receptacle has in its bottom a small recess or chamber, G, from which a vertical pipe, g, passes up through the re-

ceptacle and opens at the top of the casing A. A suitable lamp, H, is located below the chamber G, so that the heat and products of combustion will enter said chamber, and thence pass up through the pipe or flue g. The temperature within the incubating-chamber is regulated by the following devices:

I indicates a copper rod, maintained by staples on a horizontal bar within the incubating-chamber, and secured at one of its ends therein. The remaining end of the rod passes through a slot in the vertical partition, and is jointed to the upper end of a vertical rod within the lamp and water-reservoir chamber. This steel rod i passes through the horizontal notched plate or arm i' of a vertically-adjustable slide, K, and is jointed at its lower end to a lever, L, which is fulcrumed upon a standard, l, rising from the lamp. This lever is in turn connected with a sliding sleeve, l', upon the wick-tube. Excess of heat within the incubating-chamber causes the copper rod to expand, and hence as it is projected farther into the lamp-chamber by reason of such expansion it will cause rod i to move about the fulcrum or arm i', and hence operate lever l and raise the slide on the wick-tube, so as to lessen the flame, and thus allow the water-receptacle to cool to the required extent. The slide K is supported by a block, K', and adjusted by a set-screw, k, whereby by raising or lowering the slide and its notched arm, which constitutes a fulcrum bearing for the steel rod, the throw of the latter can be regulated. The shelves M, for supporting the eggs, slide in the ways m, and are each composed of a rectangular frame carrying two rollers, m', upon which is stretched an endless apron, m<sup>2</sup>, of suitable fabric. One of each pair of rollers is provided with a crank, N, by means of which it can be turned so as to move the belt or apron, and thereby turn the eggs supported on the latter. Suitable spaces, n, will be left between the ends of the shelves and the casing for the upward circulation of air, and in the casing, above the series of aprons, is a vent-hole, n', which can be closed by a pivoted slide, P. A thermometer, p, is arranged in an opening in the casing, above the incubating chamber, so as to indicate the temperature, said opening being closely covered by glass.



Below the lowest egg-shelf is a horizontal sliding partition, Q, which prevents the hot air radiated from the heating-pipe from ascending and impinging directly on said lower shelf.

5 This portion is narrower than the space between the back of the casing and the door of the incubating chamber, so that passages are left for the upward passage of the heated air, which will pass upward and be evenly distributed over the several shelves. Below the

10 pipes in the incubating-chamber is a horizontal perforated partition, R, which supports one or more sponge cups or holders, S. Moist sponges placed in these cups will absorb such

15 impurities in the air as do not escape through the vent-hole in the top of the casing. In practice these sponges should be cleansed every day, and then placed in their holders in a moist condition.

20 Below the partition R is a drawer, E, in which the chickens can be placed as soon as hatched. Warm air enters this drawer through the perforations in partition R, and fresh air can be supplied to the drawer through

25 a perforated slide, *r*, fitted in the front of the latter, when the perforations in said slide register with like perforations in the front side of the drawer.

U indicates said slide, having a line of perforations, *u*, and *u'* indicate the perforations in the drawer. Air thus entering the drawer will also pass up through the perforated partition R.

35 Perforations V are formed through the bottom of the lamp-chamber, so as to admit air to support combustion, and an opening can, if desired, be also formed through the top of said chamber. The casing and other supplemental parts of the structure are preferably

made of wood, and the same will present a neat and attractive appearance.

The dimensions are left to the option of the manufacturer, and, if desired, several sets of shelves can be employed, with a single drawer under all of said sets.

45 The form of lamp can be varied and a round or flat wick-tube employed, and the lever connected with the sleeve can be pivoted to any appropriate part of the burner—as, for example, to the rim when a base-burner is used; also, if the apparatus is made on a large scale, several lamps and mechanisms for adjusting their sleeves could be employed.

Having thus described my invention, what I claim is—

55 1. The combination, with the shelves M, located within the incubating-chamber, of the partition Q, located below the lowest shelf, air-passages at the sides of said partition, and means for supplying heat below said partition, substantially as described.

2. The combination, with the incubating-chamber, of the perforated partition R for supporting sponge-cups, and the drawer located below said partition, substantially as described.

3. The drawer E, located below the incubating-chamber, and provided with perforations in its front, in combination with the slide *r*, provided with like perforations, substantially as described.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

ALBERT HARDING MORGAN.

Witnesses:

GEO. W. DEVOE,  
J. W. SCOTT.