

No. 837,561.

PATENTED DEC. 4, 1906.

G. HACKER.
INCUBATOR.

APPLICATION FILED APR. 19, 1906.

2 SHEETS—SHEET 1.

Fig. 1.

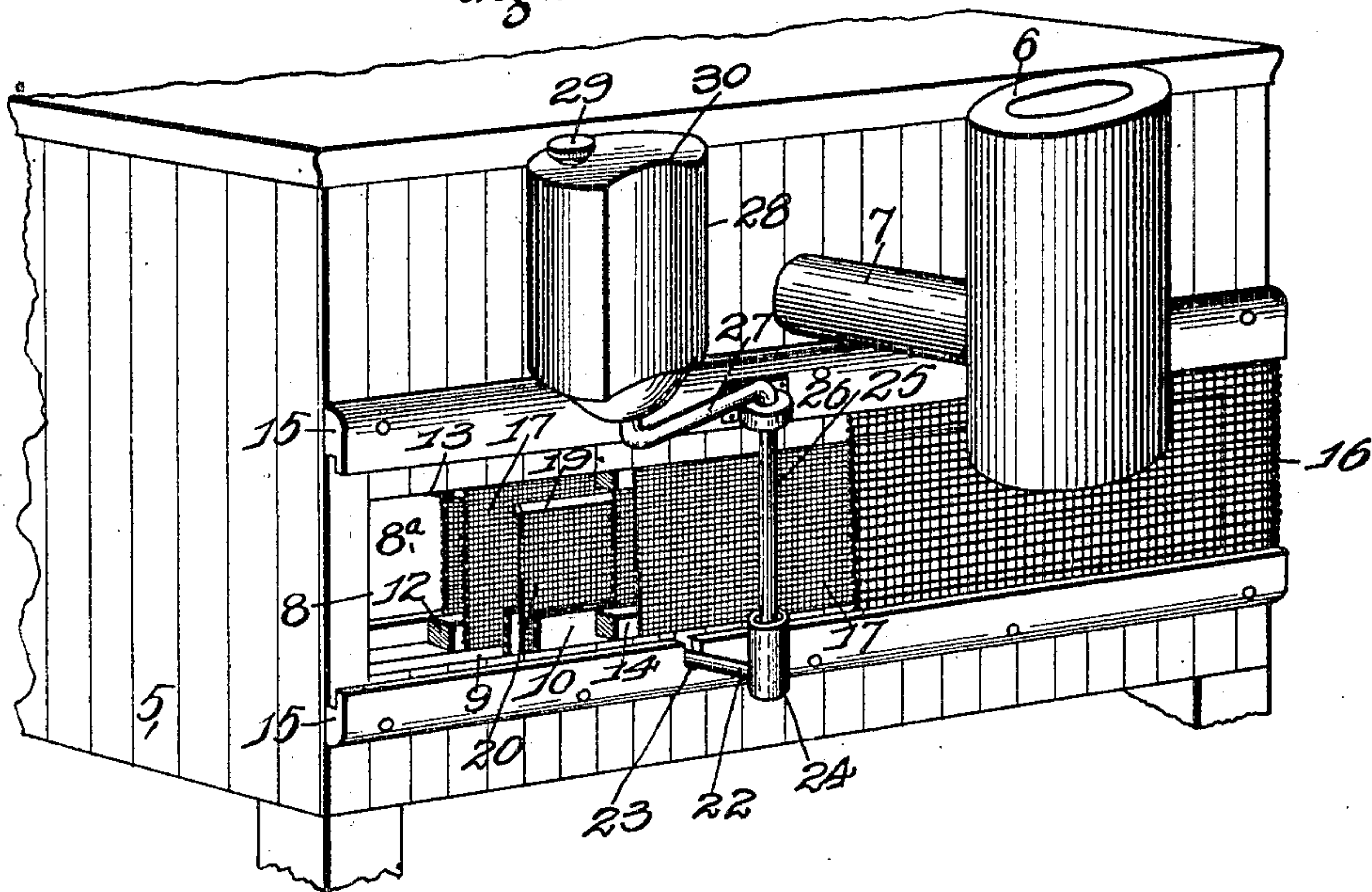
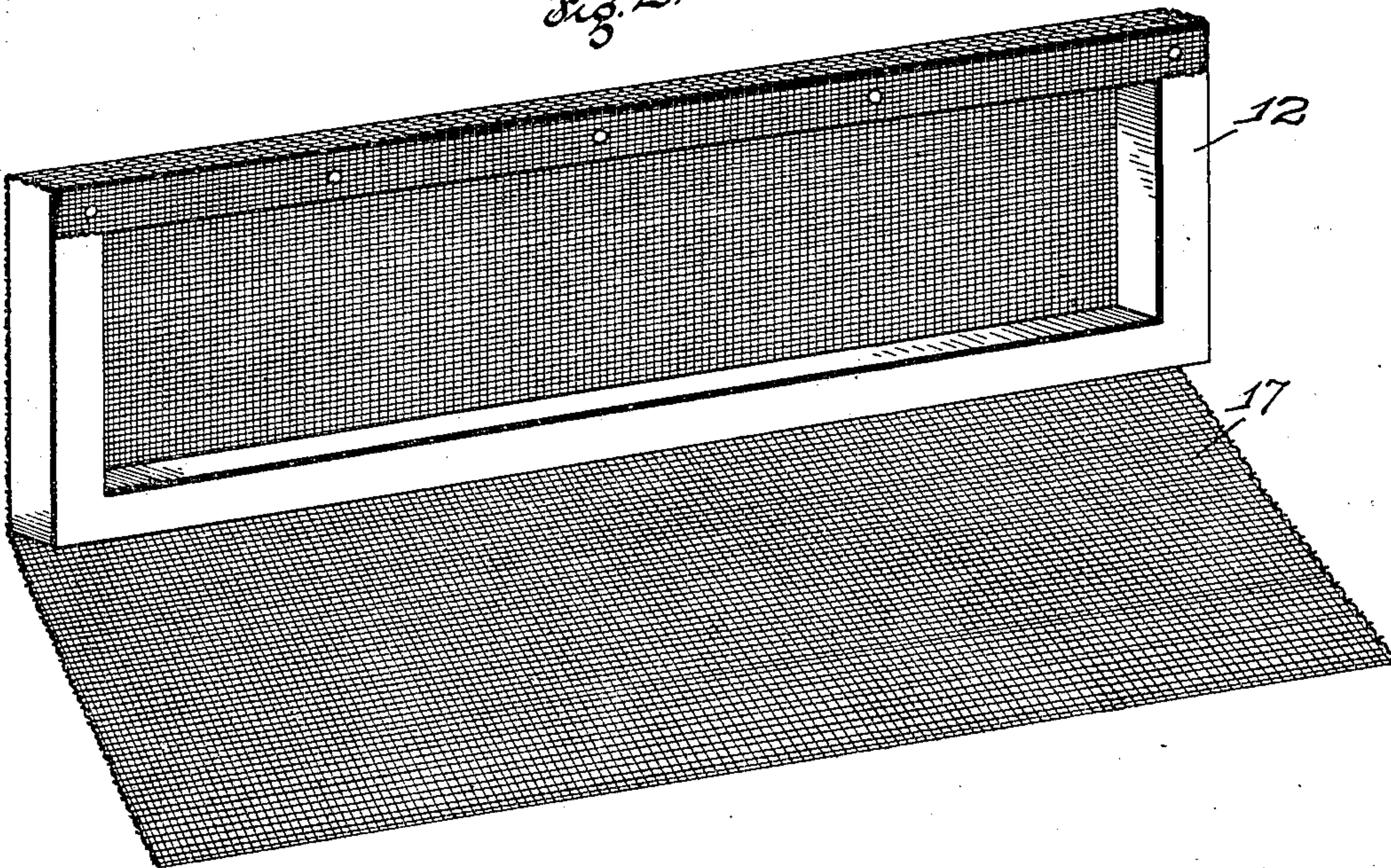


Fig. 2.



Witnesses
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Inventor
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UNITED STATES PATENT OFFICE.

GEORGE HACKER, OF ST. LOUIS, MISSOURI.

INCUBATOR.

No. 837,561.

Specification of Letters Patent.

Patented Dec. 4, 1906.

Application filed April 19, 1906. Serial No. 312,675.

To all whom it may concern:

Be it known that I, GEORGE HACKER, a citizen of the United States, and a resident of St. Louis, Missouri, have invented certain new and useful Improvements in Incubators, of which the following is a specification.

My invention relates to improvements in incubators, and has for its object to provide means for controlling the influx of air to the egg-chamber and of controlling the degrees of moisture and temperature of the same.

In the drawings, Figure 1 is a perspective view of the end of an incubator embodying my invention. Fig. 2 is a perspective view of the ventilator-frame employed in my invention. Fig. 3 is a transverse vertical view in mid-section of the walls of the incubator, showing the devices of my invention in place. Fig. 4 is a perspective view of the moisture-pan and its attachments.

In the incubator shown in the drawings the housing 5 is of usual construction and the incubator is provided with the heating-drum 6, having a horizontal pipe 7, whereby the heat generated by the source of heat-supply is conveyed to the interior of the incubator. The wall of the incubator upon the side where the heat-drum 6 is fixed is provided with a transverse longitudinal opening 8, extending from the exterior of the incubator to the interior of the egg-chamber 8^a. The opening 8 is recessed, as indicated by the numeral 9, to receive the moisture-pan 10, and is recessed, as indicated by the numeral 11, to receive the ventilator-frame 12, and it is also recessed, as indicated by the numeral 13, to receive the ventilator-frame 14. The outer face of the wall of the incubator is provided with the groove-guides 15, in which the protective sheet 16 is slidably mounted. The sheet 16 is preferably a strip of wire-gauze. The ventilator-frames 12 and 14 are identical in structure and are formed as shown in Fig. 2, the oblong frame 12 being provided with a sheet of textile fabric 17, one edge thereof being attached to the upper portion of the frame 12, as indicated in Fig. 2, the sheet 17 being of sufficient length to cover both faces of the frame 12 when desired. Thus when the incubator is desired for use in a low surrounding temperature the cloth sheet 17 is folded around the frame 12, completely covering both faces of said frame 12, as shown in section in Fig. 3, and the corresponding sheet 17 is similarly folded around the frame 14 to cover both faces thereof. In this

manner there is interposed between the egg-chamber and the exterior of the incubator 4 cloth surfaces or sheets. The frame 14 or the frame 12 may be removed, and the one remaining in place will be provided with two sheets so interposed between the egg-chamber and the exterior of the incubator, or the cloth may be so disposed as only to cover one face of either of the frames when in position. In this manner I have provided means whereby one, two, three, or four sheets of textile fabric may be used to close the opening 8 at the will of the operator and to accommodate the operation of heating to the external conditions of the temperature.

In the groove indicated by the numeral 9 the moisture-pan 10 may be seated. The moisture-pan 10 is oblong in form, as indicated in Fig. 4, and is provided at its ends with grooved upright members 18 and a horizontal rod 19, whose ends are slidably mounted in the said grooved members 18. The rod 19 is provided with a depending sheet 20, said sheet being adapted to hold moisture and being preferably made of textile fabric, its lower edge being intended to be suspended in the water in the moisture-pan 10, the water being indicated in Fig. 3 of the drawings by the numeral 21. The sheet 20 being thus provided with moisture, the air supplied to the egg-chamber through the opening 8 is moistened to the desired degree as it passes through said sheet 20, and the degree of moisture is controlled by raising or lowering the horizontal rod 19, as desired.

The moisture-pan 10 is provided with the outwardly-projecting supply-tube 22, which extends to the exterior of the incubator through the groove 23 and is provided at its outer end with the shell or housing 24. Water is supplied to the shell 24 through the tube 25, which extends vertically to the bracket 26, to which it is revolvably mounted. At its top the tube 25 is connected to the horizontal tube 27, upon the outer end of which the water-tank 28 is mounted. The tank 28 is air-tight and provided with the screw-cap 29, so that water will be fed through the tubes 27 and 25 to the shell 24. The water-tank 28 is of the form indicated in Fig. 1, having one side concaved, as indicated by the numeral 30, so that it may be seated closely to the convex exterior of the heating-drum 6 when it is desired to heat the water contained in the tank. The construction of the said tank and its attachments be-

ing as heretofore described, it may be swung into contact with the heating-drum 6 or out of contact therewith at the will of the operator.

5 By the devices thus described I have accomplished the control of the fresh-air supply, as well as the control of its temperature and degree of moisture.

10 Having fully described my invention, what I claim as new, and desire to have secured to me by the grant of Letters Patent, is—

1. In an incubator, an egg-chamber, a housing provided with an opening extending 15 from the interior of the egg-chamber to the exterior of the incubator, a ventilator-frame removably mounted in said opening and provided with a sheet of textile fabric whereby one or both of the faces of said frame may 20 be covered, substantially as specified.

2. In an incubator, an egg-chamber, a housing provided with an opening extending from the interior of the egg-chamber to the exterior of the incubator, and one or more 25 frames removably seated in said opening, each of said frames being provided with a sheet of textile fabric whereby one or both of the faces of the frame may be covered, substantially as specified.

3. In an incubator, an egg-chamber, a housing provided with an opening extending from the interior of the egg-chamber to the exterior of the incubator, and a moisture-pan 30 removably seated in said opening and provided at its end with vertical grooved members, a rod slidably mounted in said grooved members, and a sheet of textile fabric suspended from said rod, substantially as specified.

4. In an incubator, an egg-chamber, a housing provided with an opening extending from the interior of the egg-chamber to the exterior of the incubator, a ventilator-frame 45 removably mounted in said opening and provided with a sheet of textile fabric whereby one or both of the faces of said frame may be covered, a moisture-pan removably seated in said opening and provided at its end with vertical grooved members, a rod slidably 50 mounted in said grooved members, and a sheet of textile fabric suspended from said rod, substantially as specified.

5. In an incubator, an egg-chamber, a housing provided with an opening extending

from the interior of the egg-chamber to the 55 exterior of the incubator, one or more frames removably seated in said opening, each of said frames being provided with a sheet of textile fabric whereby one or both of the 60 faces of the frame may be covered, a moisture-pan removably seated in said opening and provided at its end with vertical grooved members, and a sheet of textile fabric suspended from said rod, substantially as specified. 65

6. In an incubator, an egg-chamber, a housing provided with an opening extending from the interior of the egg-chamber to the exterior of the incubator, a moisture-pan 70 removably seated in said opening and provided at its end with vertical grooved members, a rod slidably mounted in said grooved members, a sheet of textile fabric suspended from said rod, a tube extending from the moisture-pan to the exterior of the incubator, a shell mounted at the outer end of 75 said tube, and means whereby water is supplied to said shell, substantially as specified.

7. In an incubator, an egg-chamber, a housing provided with an opening extending 80 from the interior of the egg-chamber to the exterior of the incubator, a heating-drum mounted upon the exterior of the incubator above said opening, a moisture-pan removably seated in said opening, a water-supply 85 tank pivotally mounted on the exterior of the incubator and adapted to contact with the heating-drum, and suitable connecting means between the water-tank and the moisture-pan, substantially as specified. 90

8. In an incubator, an egg-chamber, a housing provided with an opening extending from the interior of the egg-chamber to the exterior of the incubator, one or more frames 95 removably seated in said opening, each of said frames being provided with a sheet of textile fabric whereby one or both of the faces of the frame may be covered, a moisture-pan removably seated in said opening, 100 substantially as specified.

In testimony whereof I have signed my name to this specification in presence of two subscribing witnesses.

GEORGE HACKER.

Witnesses:

ALFRED A. EICKS,
WALTER C. STEIN.