

No. 820,323.

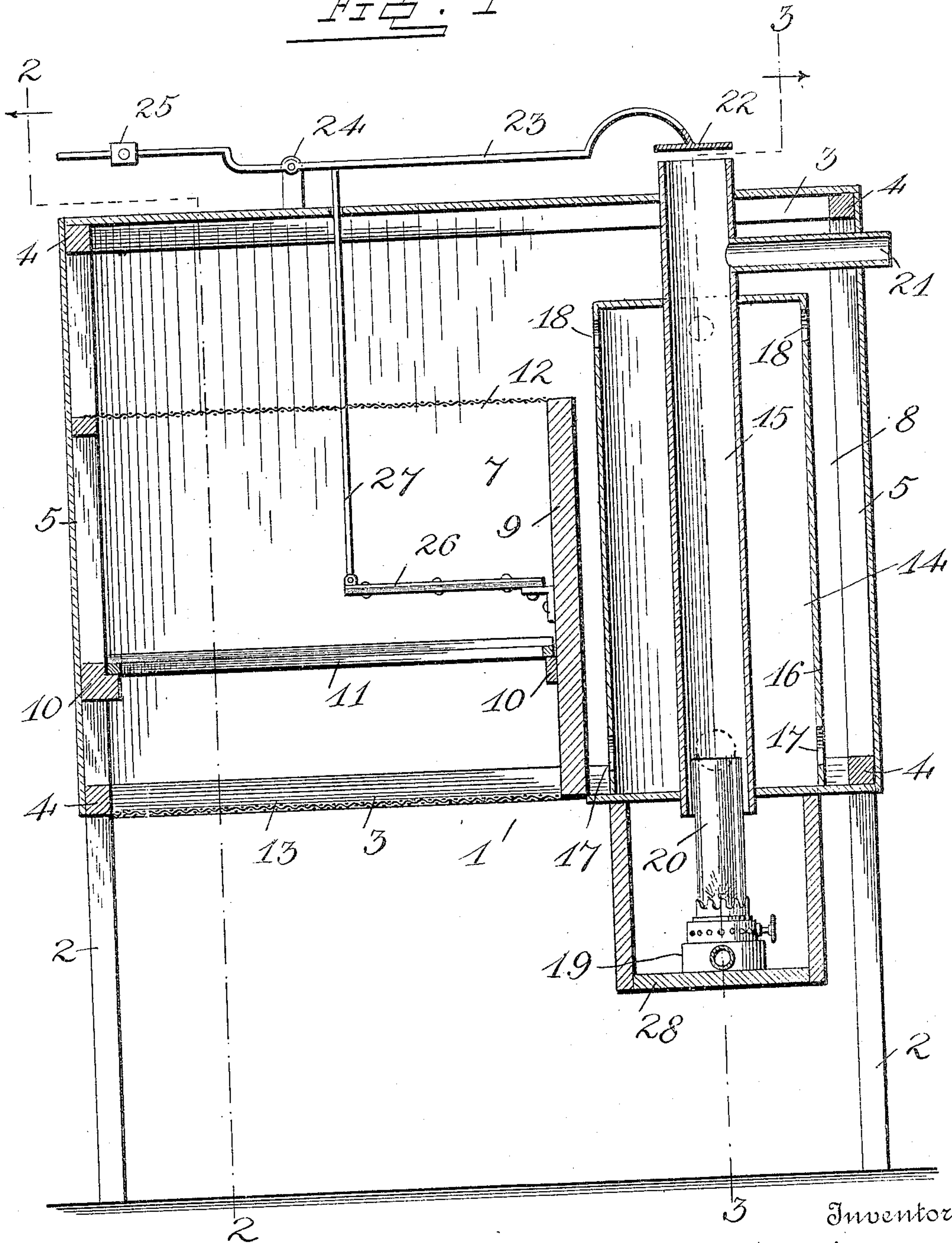
PATENTED MAY 8, 1906.

J. M. SONTAG.
INCUBATOR.

APPLICATION FILED AUG. 31, 1905.

2 SHEETS—SHEET 1.

FIG. 1



Witnesses
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C. H. Griesbauer

J. M. Sontag
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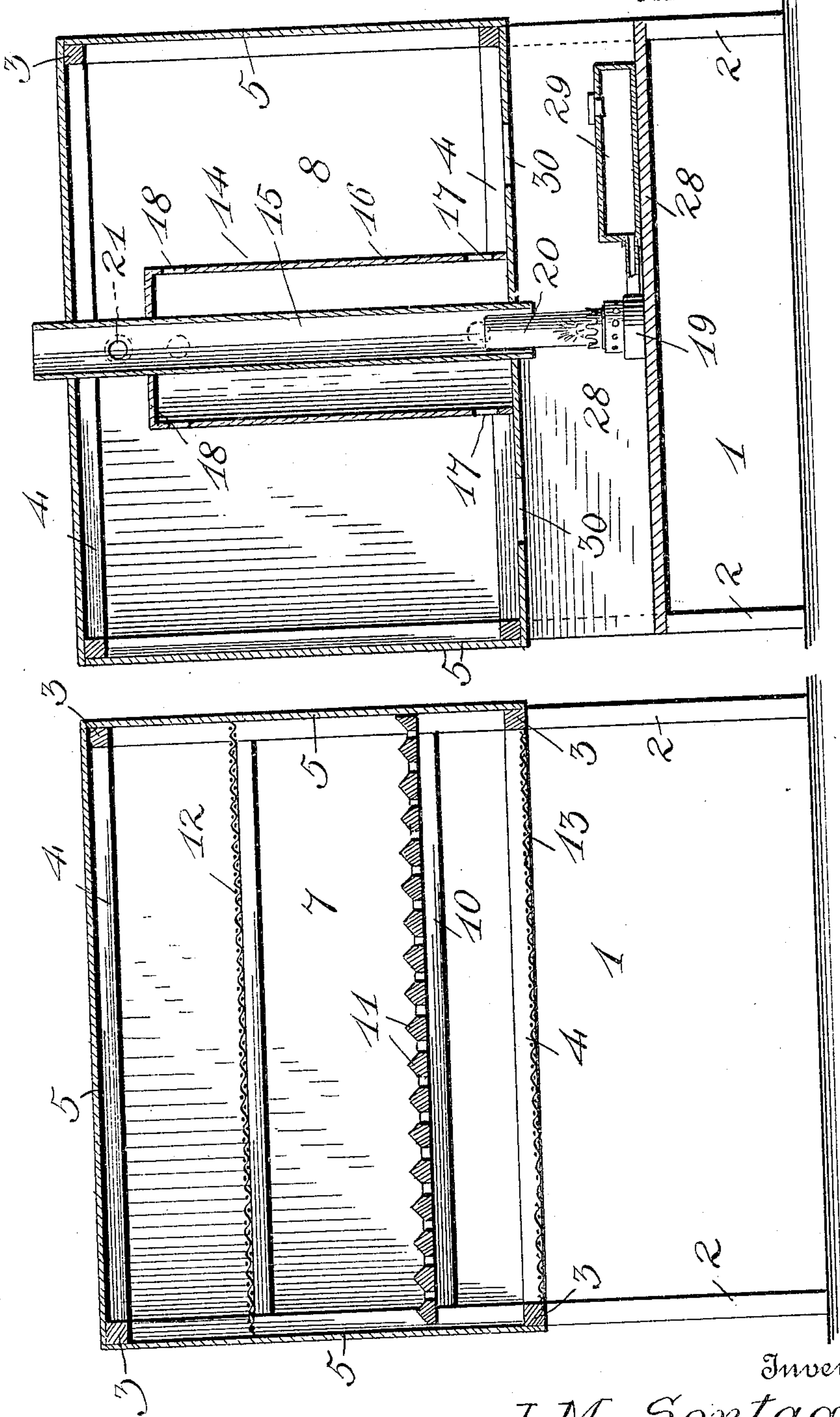
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2 SHEETS-SHEET 2.

FIG. 3

FIG. 2



Witnesses
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UNITED STATES PATENT OFFICE.

JOHN M. SONTAG, OF ST. CHARLES, ILLINOIS.

INCUBATOR.

No. 820,323.

Specification of Letters Patent.

Patented May 8, 1906.

Application filed August 31, 1905. Serial No. 276,577.

To all whom it may concern:

Be it known that I, JOHN M. SONTAG, a citizen of the United States, residing at St. Charles, in the county of Kane and State of Illinois, 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.

My invention relates to improvements in incubators; and it consists in the novel construction, combination, and arrangement of parts hereinafter described and claimed.

The object of the invention is to improve and simplify the construction and operation of devices of this character, and thereby render the same more efficient and durable in use and less expensive to manufacture.

The above and other objects, which will appear as the nature of my invention is better understood, are accomplished by means of the construction illustrated in the accompanying drawings, in which—

Figure 1 is a vertical longitudinal sectional view through an incubator constructed in accordance with my invention. Fig. 2 is a vertical transverse sectional view through the same, taken on the line 2 2 in Fig. 1; and Fig. 3 is a similar sectional view taken on the line 3 3 in Fig. 1.

Referring to the drawings by numeral, 1 denotes my improved incubator, which comprises a substantially rectangular frame of wood or metal covered with paper, cloth, silk, or other suitable material. The frame, as shown, consists of four upright corner-posts 2, connected by upper and lower side bars 3 and upper and lower end bars 4. The covering 5 is secured to said bars in any desired manner, so as to form the body or casing of the incubator. This casing is divided into two chambers 7 and 8 by a vertical partition 9, which is of less height than the depth of the casing, so that the upper portions of said compartments are in communication. The compartment 7 forms an egg-chamber, and within it is supported upon cleats or ledges 10 an open egg-tray 11. The top of the egg-chamber 7 is closed by a cover or diaphragm 12, of cloth, and the bottom 13 of said chamber is also preferably of cloth, so that air may circulate through the egg-chamber. While this circulation is sufficient to keep the air pure within the egg-chamber 12, it is not sufficient to cause the temperature

of the eggs to drop below the desired point. By having the top and bottom walls of the egg-chamber of cloth or other porous material a pure natural mild heat is maintained in the same by a hot-air heater 14, which is mounted in the compartment or chamber 8 of the incubator-casing.

The heater 14 comprises two concentrically-disposed cylinders 15 and 16, the inner or smaller one of which extends vertically through the chamber 8 and has its ends open, as shown. The outer cylinder or jacket 16 has its bottom formed with openings 17 to admit fresh air and its upper portion formed with openings 18 to discharge hot air into the upper portion of the incubator-casing. The air passing through the jacket or cylinder 15 is heated by reason of its contact with the cylinder 15, through which the heat and products of combustion pass from a lamp or similar heater 19, which is mounted so that its chimney 20 projects into the open lower end of said cylinder 15. The heat and products of combustion from the lamp may pass outwardly through the open upper end of the cylinder 15 or through a horizontally-disposed pipe or flue 21, which has one end in communication with the upper portion of the cylinder 15 and its other end projecting through one of the end walls of the incubator-casing. The discharge through the cylinder 15 is controlled by a damper 22, which is secured upon one end of a lever 23, pivoted, as at 24, upon the top of the casing and having at its opposite end an adjustable weight 25. The lever 23 is operated automatically by the usual thermostat 26, which is located within the egg-chamber and connected by said lever to a rod 27. The lamp or heater 19 is supported in a bracket 28, secured upon the bottom of the casing. This heater may be of any desired form and construction; but I preferably have its oil reservoir or tank 29 in the form of a flat horizontally-disposed box, so that the wick is comparatively short and the oil may feed readily therethrough. The bottom of the chamber 8 is preferably formed with one or more openings 30 to permit cool fresh air to enter the casing.

The construction, operation, and advantages of the invention will be readily understood from the foregoing description, taken in connection with the accompanying drawings. It will be seen that by constructing the casing of paper or other light material the incu-

bator may be manufactured and shipped at comparatively small cost and that by making the top and bottom walls of the egg-chamber of cloth or the like the air within said chamber will at all times be pure.

While I have shown and described the preferred embodiment of my invention, it will be understood that I do not wish to be limited to the precise construction herein set forth, since various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

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

1. An incubator comprising an open frame, a covering therefor, of porous material, a vertical partition in said frame, of less height than the depth of the latter, a heater on one side of the said partition, an egg-tray on the other side thereof, and a diaphragm of porous fabric disposed over said egg-tray.

2. An incubator comprising a casing, a vertical partition therein, of less height than

the depth of said casing, dividing the latter into an egg-chamber and a heated chamber, an egg-tray in said egg-chamber, diaphragms of cloth closing the top and bottom of the egg-chamber, and a heater disposed in the heater-chamber.

3. A hot-air heater for incubators or the like comprising an inner cylinder or flue adapted to extend through the casing of an incubator, a damper for opening and closing the upper end of said flue, a branch outlet-flue adjacent to the upper end of the latter, a cylindrical jacket surrounding said pipe or flue within the incubator and having air inlet and outlet openings at its opposite ends, the lower open end of said pipe or flue being adapted to receive the chimney of a lamp or similar heater, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JOHN M. SONTAG.

Witnesses:

F. MARSDEN,
JOSEPH CLARK.