

(No Model.)

H. M. SHEER.
INCUBATOR.

2 Sheets—Sheet 1.

No. 488,953.

Patented Dec. 27, 1892.

Fig. I.

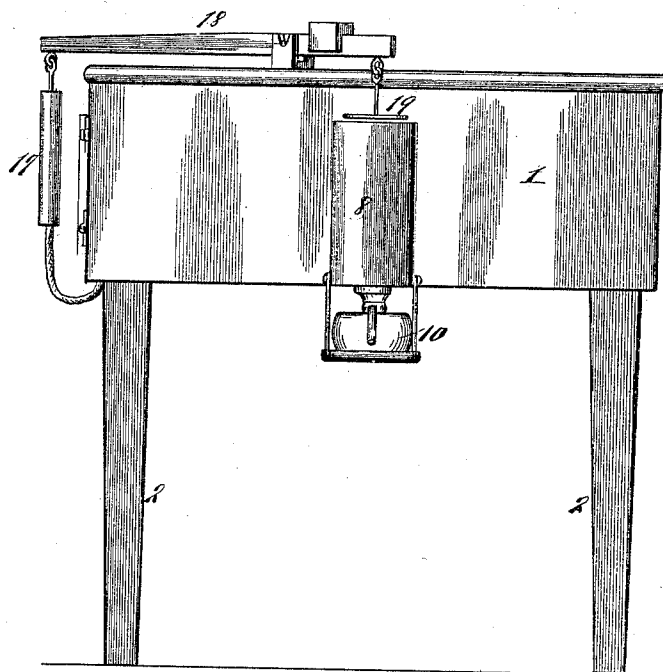
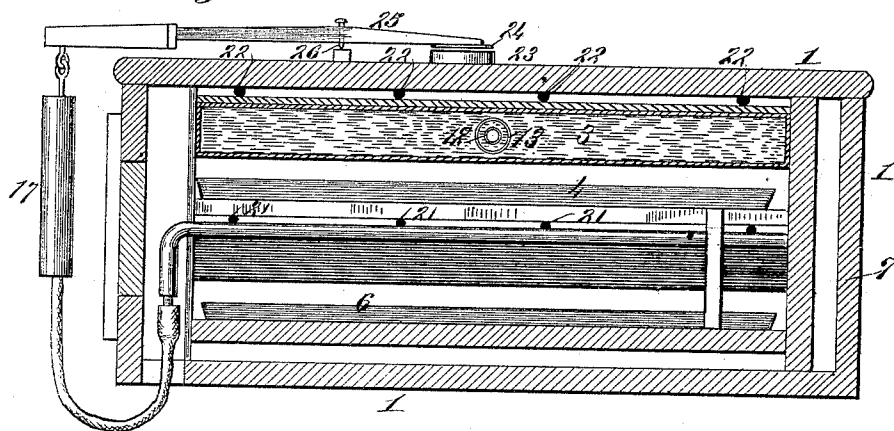


Fig. II.



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(No Model.)

2 Sheets—Sheet 2.

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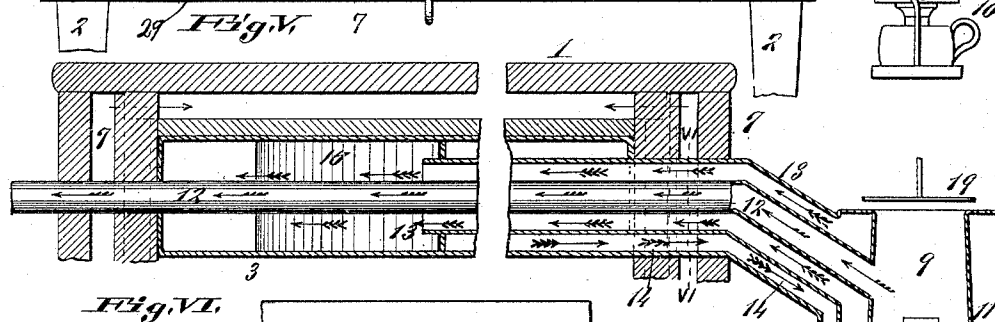
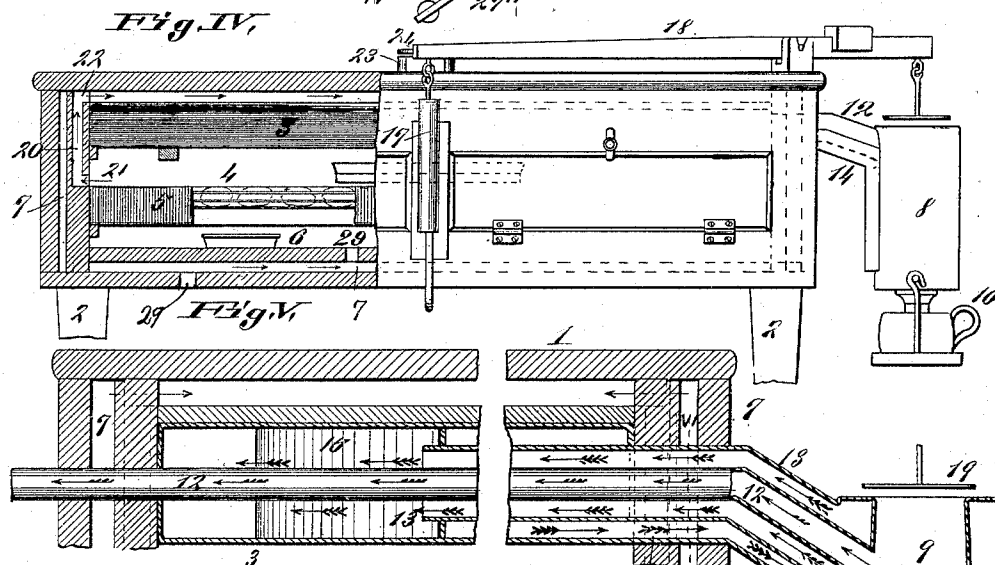
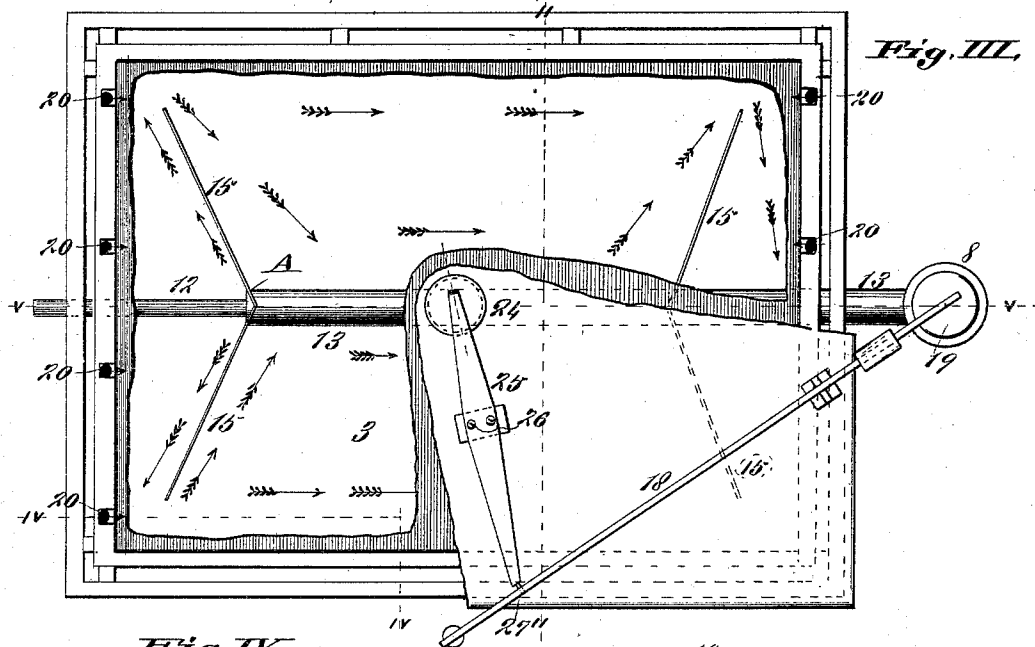


Fig. VI.

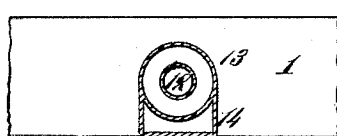
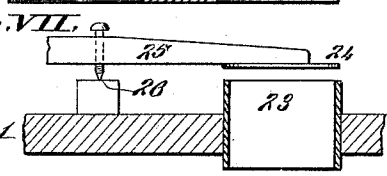


Fig. VII.



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UNITED STATES PATENT OFFICE.

HENRY M. SHEER, OF QUINCY, ILLINOIS, ASSIGNOR TO CHARLES M. ERTTEL,
OF SAME PLACE.

INCUBATOR.

SPECIFICATION forming part of Letters Patent No. 488,953, dated December 27, 1892.

Application filed September 8, 1892. Serial No. 445,354. (No model.)

To all whom it may concern:

Be it known that I, HENRY M. SHEER, of Quincy, in the county of Adams and State of Illinois, have invented a certain new and useful Improvement in Incubators, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My present invention relates to certain improvements designed to facilitate the uniform heating of the egg chamber of an incubator, with as little expenditure of fuel or oil as possible, and to facilitate the thorough ventilation of the egg chamber.

My present invention consists in features of novelty hereinafter fully described and pointed out in the claims.

Figure I is an end view, illustrative of my improved incubator. Fig. II is a vertical, transverse section, taken on line II—II, Fig. III. Fig. III is a plan or top view, with parts broken away. Fig. IV is part in side view and part in section, on line IV—IV, Fig. III. Fig. V is an enlarged, detail, vertical section, taken on line V—V, Fig. III. Fig. VI is a detail section, taken on line VI—VI, Fig. V. Fig. VII is an enlarged, detail view of the air regulator.

Referring to the drawings, 1 represents the body of the incubator which is supported on suitable legs 2. In the body are a water tank 3, and an egg chamber 4, in which are supported suitable trays 5 for holding the eggs and beneath which moistening pans 6 may be located; the bottom, sides and ends of the body are provided with dead air chambers 7.

I will first describe the part of my invention which relates to the manner of heating the water in the tank 3.

8 represents a boiler adapted to contain water, and which has a central opening or chamber 9 (see Fig. V) for receiving the chimney and burner of a lamp 10; the chamber 9 is open at bottom and top and surrounding it is the water jacket 11 of the boiler.

12 represents a hot air flue leading from the chamber 9 through the body of the incubator, and centrally through the water tank 3. Surrounding this air flue is a water pipe or jacket 13, which extends from the upper end of the boiler 8 through the water tank to near

the far end of the tank from the boiler, as shown at A, Fig. III.

14 represents a water duct extending from the water tank to the lower part of the boiler, as shown in Fig. V. This duct is preferably located directly beneath the water pipe 13, as shown in Fig. VI, thus taking the water from the center of the tank at the end nearest the boiler.

15 represents deflectors located within the water tank and projecting outwardly from the water pipe 13 to near the sides of the tank, as shown in Fig. III.

The operation of this part of my invention is as follows:—The boiler and tank are filled with water. The lamp is then lighted, and the heat from it passing through the chamber 9 of the boiler and through the flue 12, which traverses the water tank, (see half feathered arrows Fig. V), heats the water and causes it to circulate, as indicated by the full arrows, through the pipe 13, through the water tank, around the deflectors 15 and back through the duct 14, into the lower part or bottom of the boiler, and a continuous circulation is maintained as long as the lamp burns, the water being delivered into and removed from the central portion of the tank.

For the purpose of regulating the heat, I employ a thermostat 17, such as is shown and described in my application filed January 30, 1892, Serial No. 419,787. To this thermostat is secured a disk 19, which is located over the open, upper end of the chamber 9 of the boiler 8. The thermostat moves this disk to or from the mouth of the chamber 9, as the temperature of the incubator varies, thus maintaining a uniform heat in the egg chamber by allowing the heat from the lamp to pass off directly through the open, upper end of the boiler chamber 9 or by causing it to pass through the flue 12, and thus the temperature is regulated without any adjustment of the wick or burner cone of the lamp.

The other part of my invention relates to the means for ventilating the egg chamber. This is done by forming openings 20 in the ends of the outer walls of the body of the incubator inside of the dead air chambers 7, (see Fig. IV.) These openings communicate at 21 with the egg chamber and at 22 with the

water tank chamber, which latter chamber is provided with a central flue 23, controlled by a disk 24 secured to one end of a lever 25, which is fulcrumed or pivoted at 26 (see Figs. 5 II and VII) and the other end of which is connected at 27 to the lever 18 of the thermostat, and thus as the thermostat regulates the heat of the lamp, it also regulates the circulation of air. In case, by any accident, the heat in the egg chamber of the incubator should become excessive, the thermostat opens the damper 19 of the boiler, and at the same time opens the damper 24 of the ventilating flue, thus causing a rapid restoration of the normal temperature in the egg chamber. The air enters the egg chamber through any suitable passage, as, for instance, through openings 29, see Fig. IV.

I claim as my invention:—

- 20 1. In an incubator, the combination of a boiler, a water tank, a hot air flue leading from the upper part of the boiler through the water tank, a water pipe surrounding the hot air flue and extending from the boiler through the water tank, to near its end farthest from the boiler, and a return duct extending from the end of the water tank nearest the boiler to the lower part of the boiler; substantially as and for the purpose set forth.
- 30 2. In an incubator, the combination of a boiler, a water tank, a hot air flue leading from the boiler centrally through the water tank, a water pipe leading from the upper part of the boiler to near the far end of the

tank from the boiler, and which surrounds said hot air flue, deflectors located in said tank and extending from said water pipe to near the sides of the tank, and a return duct leading from the central part of the tank to the lower part of the boiler; substantially as and for the purpose set forth.

3. In an incubator, the combination of a boiler, a water tank, a hot air flue leading from the boiler centrally through the water tank, a water pipe surrounding said air flue, and which extends from the boiler to near the far end of the tank, and a return duct located directly beneath said water pipe, and which carries the water from the tank back to the bottom of the boiler; substantially as and for the purpose set forth.

4. In an incubator, the combination of a water tank, a boiler having a central air chamber, a hot air flue leading from said chamber through said water tank, a water pipe surrounding said hot air flue, and extending from the boiler to near the far end of said tank, a return duct leading from the tank to the bottom of the boiler, and a thermostat controlling the open, upper end of said boiler chamber, whereby the heat from the boiler lamp is allowed to escape directly from said chamber or is caused to pass through said hot air pipe; substantially as and for the purpose set forth.

HENRY M. SHEER.

In presence of—

RICHARD JANSEN,
GEO. S. WEISENBURGER.