

(No Model.)

A. KERR.
INCUBATOR.

No. 568,618.

Patented Sept. 29, 1896.

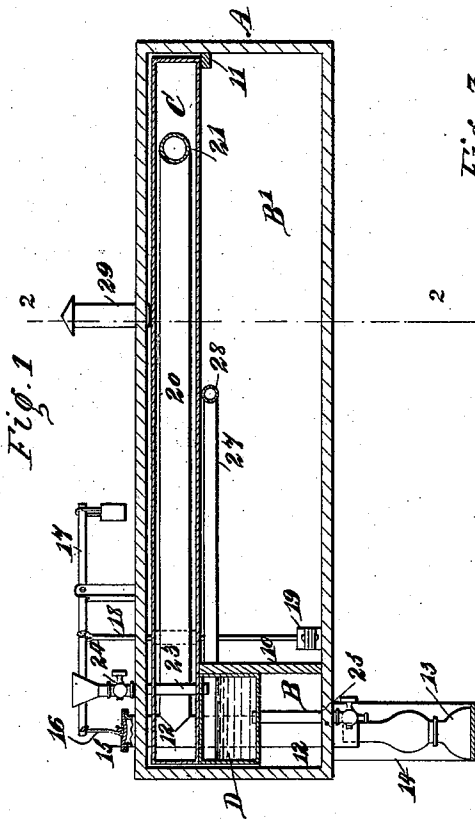
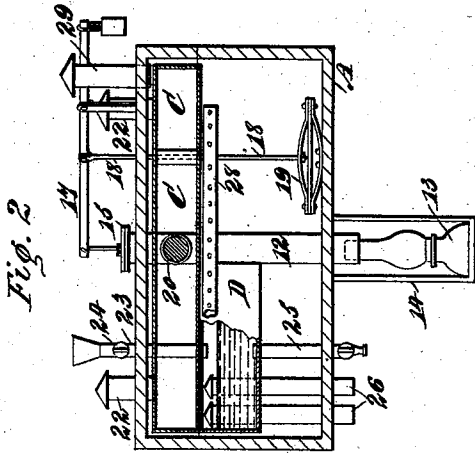
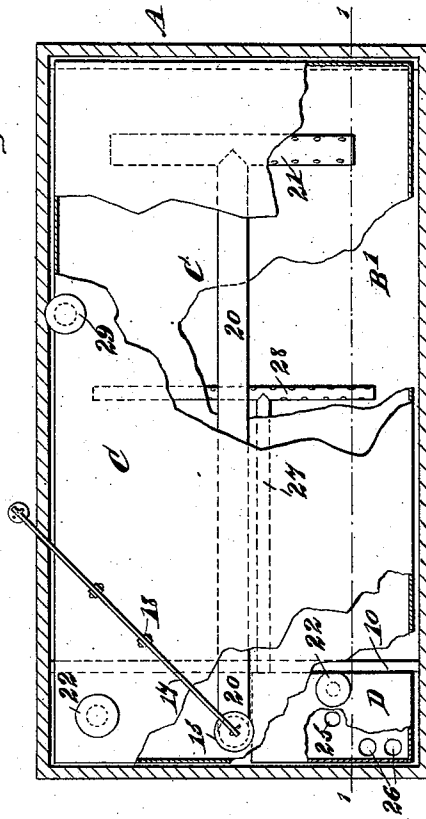


Fig. 3



WITNESSES:

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ARCHIBALD KERR, OF CARMICHAELS, PENNSYLVANIA.

INCUBATOR.

SPECIFICATION forming part of Letters Patent No. 568,618, dated September 29, 1896.

Application filed October 2, 1895. Serial No. 564,369. (No model.)

To all whom it may concern:

Be it known that I, ARCHIBALD KERR, of Carmichaels, in the county of Greene and State of Pennsylvania, have invented a new
5 and useful Improvement in Incubators, of which the following is a full, clear, and exact description.

My invention relates to an improvement in the interior construction of incubators, and
10 especially to the construction and combination of the heating and moisture tanks of incubators; and the object of the invention is to construct such tanks in a simple, durable, and economic manner, and to provide for an
15 efficient circulation both of the heat and of the moisture, and also to provide a regulating device automatically operated and adapted to control the heat in the incubating-chamber.

The invention consists in the novel construction and combination of the several
20 parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification,
25 in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a longitudinal vertical section through the body of the incubator, taken essentially on the line 1 1 of Fig. 3, and likewise through the heating and moisture tanks.
30 Fig. 2 is a transverse section taken substantially on the line 2 2 of Fig. 1; and Fig. 3 is a horizontal section taken through the body portion of the incubator, the moisture and
35 heating tanks being shown partially in plan view and partially as broken away.

In carrying out the invention the body portion A of the incubator may be of any desired formation. Ordinarily, however, it is
40 somewhat box-like and is provided with a transverse partition 10 near one end, which partition extends from the bottom upward to within a predetermined distance of the top of the body, thereby dividing the body into
45 a small end chamber B and a large incubating-chamber B'. The heating-tank C is located in the top of the body, extending over both of the chambers, being supported near one end by resting upon the partition 10 and
50 at the opposite end by a batten 11 or its equivalent.

A flue 12 is made to extend through the body within practically the central portion of the smaller or end chamber B. This flue projects beyond both the top and the bottom
55 of the body and receives at its lower end the chimney of a lamp 13 or other heat-generator, the lamp or generator being supported upon a stirrup or bracket 14, secured to the under face of the body.

A valve 15 normally closes the upper end
60 of the flue 12, and this valve is connected with one end of a lever 17, fulcrumed upon a suitable support at the top of the incubator, the opposite end of the lever being weighted
65 to counterbalance the valve.

A link 18 is connected with the aforesaid lever between its fulcrum and the valve, and this link extends downward through the incubator, and likewise through the heating-tank, to a connection with a thermostat 19,
70 and this thermostat is preferably made of two elliptical strips of brass and an intervening strip of iron or equivalent metal, the ends of the strips being secured together and the
75 lower elliptical strip attached to the bottom of the incubator. This thermostat is located within the incubating-chamber, and when the heat becomes excessive in said chamber the expansion of the elliptical portions of the
80 thermostat will cause the lever to be raised and the valve to uncover the flue 12, permitting the hot air to escape at the top of the incubator.

A hot-air-conducting pipe 20 is attached to
85 the flue 12 and extends longitudinally along the central portion of the heating-tank C to within a point near its opposite end, where a transverse or cross pipe 21 is attached to the longitudinal pipe 20, and the said cross-pipe
90 is preferably apertured, and at the heat-receiving end of the heating-tank offtake pipes or funnels 22 are located, one preferably near each side, and these extend upward through the top of the incubator, being provided at
95 their upper ends with suitable caps held a predetermined distance from the exit ends of the said outlets. Thus it will be observed that when the valve 15 is closed over the flue 12 the heat is conducted practically through-
100 out the length of the heating-tank and escapes into the tank at the end farthest removed

from the heat-inlet, and the hot air will then pass rearward or in direction of the inlet of the tank and find an exit through the outlet-pipes 22, thus providing for a thorough circulation of the heat.

At one side of the flue 12, within the end chamber B, a moisture-tank D is located, being either attached to the bottom of the heating-tank or supports may be provided for its lower surface. The moisture-tank is adapted to contain a predetermined amount of water, and the water is fed into the tank by means of an inlet-pipe 23, which passes from the top of the incubator downward into the tank, and near its upper end the inlet or feed pipe 23 is provided with a valve 24, whereby, if there is excessive moisture, by opening the valve the moisture may escape from the incubator.

An outlet-pipe 25 is connected with the bottom of the moisture-tank and extends through the bottom of the incubator, having a valve at its lower outer end, and air-supply pipes 26 are carried upward through the bottom of the incubator into the moisture-tank and above the water-level, each of the said air-supply pipes being preferably provided at the upper end with a conical cap, tending to convey the air downward upon the surface of the water, and the moisture is circulated in the incubating-chamber by attaching to the moisture-tank near its upper edge a horizontal T-shaped tube 27, the head 28 whereof is perforated, as shown in Fig. 3, and the moist air will escape through an outlet 29, located in the upper portion of the aforesaid incubating-chamber. The air-supply pipes 26 also serve as overflow-pipes to prevent the water from rising to such a height in the tank D as to pass out through the pipe 27 into the incubating-chamber B'. Under this arrangement it is obvious that not only is a perfect circulation of heat obtained, but the said heat is efficiently applied, as is likewise the moisture, and the entire device is economic, durable, and simple.

The water in the moisture-pan is heated, primarily, by the heat contained in the smaller compartment B. Therefore the moisture-pan and its branches serve to heat the air in the incubating-chamber as well as to moisten it. Under this construction the cold draft over the eggs, incident to many incubators, is obviated, and the eggs, also the young chickens, are prevented from being chilled.

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

1. An incubator, comprising a body portion provided near one end with a vertical partition extending from the bottom to within a predetermined distance of the top, a heating-tank resting upon the partition and extending the entire length of the body, said tank serving with the partition to divide the body into heating and incubating chambers, a heating-flue extending through the heating-

chamber, the heating-tank, and out through the top and bottom of the body, a hot-air pipe connected to the heating-flue in the heating-tank, extending nearly to the opposite end of the said tank, and provided at its end with a cross-apertured pipe, a moisture-tank in the heating-chamber, a T-shaped pipe secured to the moisture-tank and extending into the incubating-chamber below the heating-tank, air-supply pipes leading through the bottom of the body up into the moisture-tank above the water-level thereof and an automatic valve on the upper end of the heating-flue, substantially as described.

2. In an incubator, the combination, with the body of the incubator provided with a partition dividing it into two compartments of unequal size, the larger compartment being the incubating-compartment, a heating-tank extending over both of the compartments, and a moisture-tank adapted to receive water located within the smaller compartment of the incubator, of a heating-flue extending through the incubator from top to bottom and through the heating-tank, a heating agent connected with the lower end of the said flue, a thermostatically-controlled valve adapted to normally close the upper end of the said flue, the thermostat being located within the incubating-chamber, a branch from the main flue located within the heating-tank and extending to a point removed from the heat-inlet, exits for the heated air located at the inlet portion of the said tank, air-supply pipes extending from the outside of the incubator into the moisture-tank and above its water-line, a moisture-supply pipe extending from the moisture-tank into the incubating-chamber, being provided with sundry outlets, and valve-controlled pipes for supplying water to or drawing water from the moisture-tank, as and for the purpose specified.

3. In an incubator, the combination with a body having a heating-chamber at one end, of a water-tank in said chamber, a pipe leading up through the body into the water-tank above the water-level thereof, said pipe serving both as air and overflow pipe, a valved pipe leading from the tank through the top of the body and serving as a means for supplying water to the tank and as an escape for moisture therefrom, and a pipe leading from the upper part of the water-tank into the incubating-chamber, substantially as described.

4. An incubator comprising a body provided with a vertical partition extending to within a predetermined distance of the top, a heating-tank resting upon the partition and with it dividing the body into a heating and incubating chamber, a heating-flue extending through the heating-chamber, the heating-tank, and the top and bottom of the body, said flue being provided with an outlet in the heating-tank, an automatic valve for the upper end of the flue, a water-tank in the

heating-chamber, a pipe leading up through the bottom of the body into the water-tank above the water-level thereof, said pipe serving both as an air and overflow pipe, a valved
5 pipe leading from the tank through the top of the body and serving both as a water-supply and moisture-outlet, and a pipe leading from the top of the water-tank into the upper part of the incubating-chamber, substantially as herein shown and described.

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Witnesses:

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