(No Model.)

C. W. ROBINSON.

INCUBATOR.

No. 499,396. Patented June 13, 1893.

Fig. 1.

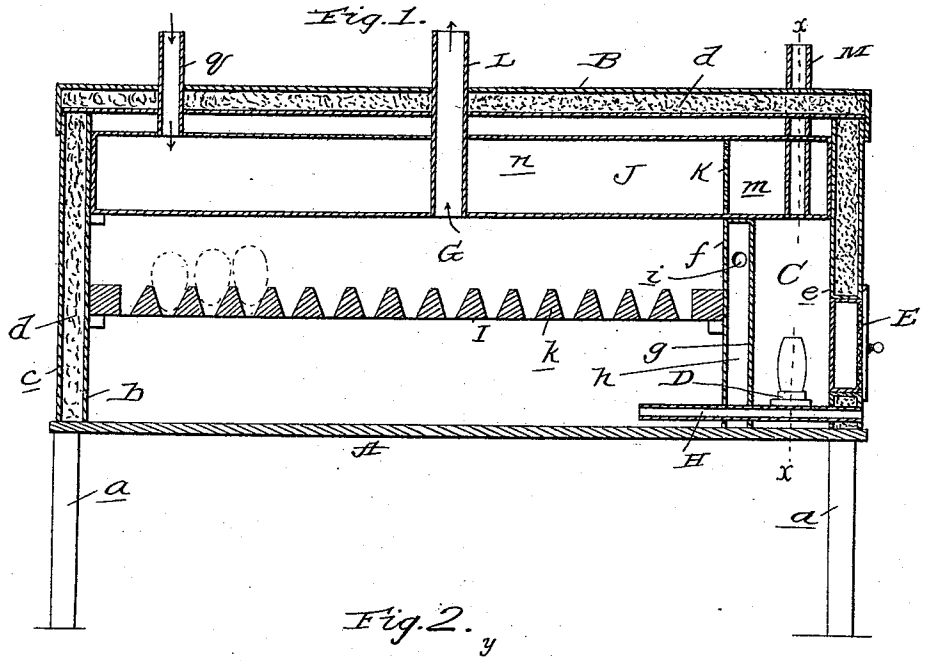


Fig. 2.

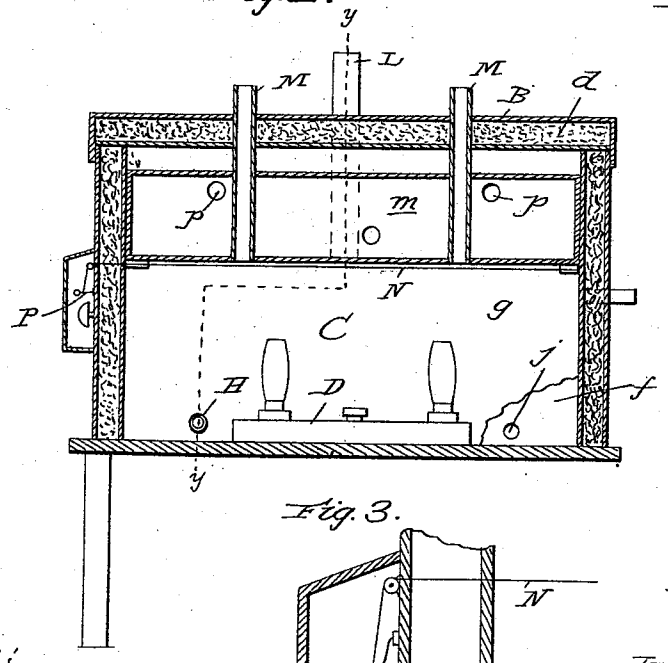
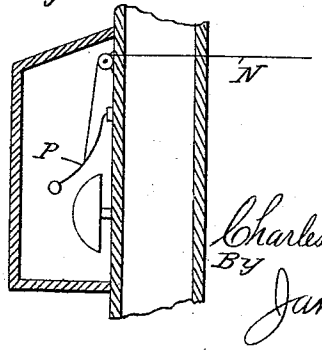


Fig. 3.



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UNITED STATES PATENT OFFICE.

CHARLES W. ROBINSON, OF GREENTOWN, INDIANA.

INCUBATOR.

SPECIFICATION forming part of Letters Patent No. 499,396, dated June 13, 1893.

Application filed May 4, 1892. Serial No. 431,853. (No model.)

To all whom it may concern:

Be it known that I, CHARLES W. ROBINSON, a resident of Greentown, Howard county, Indiana, have invented a new and useful Machine for the Hatching of Chickens, of which the following is a specification.

My invention has relation to improvements in incubators and it has for its general object to provide a simple, and easily operated incubator, embodying such a construction that all of the eggs under treatment will at all times be subjected to a uniform degree of heat.

Another object of the invention is to provide an incubator embodying such a construction that a continuous current of fresh heated air will be let into the egg chamber and the foul odors and carbonic acid gas which ordinarily collect in the bottom of said chamber will be forced therefrom.

A still further object of the invention is to provide an incubator embodying means whereby an alarm will be promptly sounded should a fire break out in the lamp chamber.

Other objects and advantages will be fully understood from the following description and claims when taken in connection with the annexed drawings in which—

Figure 1, is a vertical longitudinal section of my improved incubator. Fig. 2, is a vertical transverse section taken in the plane indicated by the line *x*, *x*, on Fig. 1. Fig. 3, is a detail view, illustrating the mechanism for sounding the alarm.

Referring by letter to said drawings: A, indicates the casing of my improved incubator, and B, indicates the cover of the same which is made removable for a purpose presently disclosed. The casing A, which is mounted upon the legs *a*, or upon any other suitable support, comprises an inner wall *b*, and an outer wall *c*, between which is interposed a non-heat conducting filling *d*, which serves in practice to retain the heat within the incubator and prevents a sudden lowering of the temperature of the surrounding air, from affecting the eggs under treatment.

Arranged in the forward portion of the casing A, as better shown in Fig. 1, is the lamp chamber C, which is designed to receive the lamp D, which may be of any approved pattern. This chamber C, is lined with sheet metal *e*, as illustrated so as to prevent the heat of the lamp from igniting the wood work, and it is provided with a suitable screen door E, which serves to admit air into the chamber and at the same time prevents mischievous tampering with the lamp.

G, indicates the egg chamber which has its end wall *f*, arranged a suitable distance from the end wall *g*, of the lamp chamber C, as shown, so as to afford an air space *h*, between the two chambers and prevent the heat of the lamp from affecting the eggs nearest the lamp chamber. The air space *h*, is connected with the outer air by ports *i*, formed in the side walls of the casing, as shown in Fig. 1, and the said space is connected with the egg chamber G, by openings *j*, formed in the wall *f*, preferably adjacent to the bottom of the casing, whereby it will be seen that an outlet is afforded for the foul odors and carbonic acid gas which ordinarily collect in the bottom of the egg chamber. Fresh air is admitted into the egg chamber G, through the pipe or conduit H, which leads from the open air through the lamp chamber C, and the air space *h*, as shown. By reason of this air-induction pipe H, leading through the chamber C, as shown, it will be seen that the air will be slightly heated on its way to the egg chamber and will thereby be prevented from lowering the temperature in said chamber, which is a highly important desideratum.

I, indicates the egg tray, which is mounted upon ledges within the chamber G. This tray I, may be of any approved construction, but I prefer in practice to provide it with slats *k*, of a triangular form in cross section, as shown, inasmuch as such slats take up but a minimum amount of room and are adapted to hold a large number of eggs.

Mounted upon suitable ledges or other supports and resting above the egg chamber G, and the lamp chamber C, is a boiler J, which is divided by the vertical transverse partition wall K, into the compartment *m*, which rests over the lamp chamber, and the compartment *n*, which rests over the egg chamber. This boiler J, is provided in the wall K, with a series of apertures *p*, which connect the compartments *m*, *n*, as shown, and serve to con-

duct the water from the compartment *m*, where it is heated by the lamp, to the compartment *n*, and back again. By thus circulating the heated water above the egg chamber it will be seen that all parts of said chamber will be heated to a uniform degree, and it will be further seen that a small flame will serve to heat the water and that consequently but a small amount of oil is necessary to operate the device. The boiler J, is filled with water through the pipe *q*, which is connected to said boiler and extends through an opening formed in the cover B, as shown.

Suitably connected to and extending through the boiler J, preferably at the middle thereof, is a vertical pipe L, which also extends through an opening in the cover B, and serves to conduct the heated air from the egg chamber. This pipe L, may if desired, be provided with a suitable valve (not illustrated) through the medium of which the egress of heated air from the egg chamber may be regulated.

M, indicates two pipes which are connected to the boiler and extend through said boiler, and the cover B. These pipes M, which are arranged above the chamber C, serve to conduct the smoke from the lamp in said chamber C, out of the casing.

By arranging the boiler in the casing, in the manner described, and connecting the pipes L, and M, to said boiler it will be perceived that the boiler may be readily removed from the casing when desired without disarranging or otherwise affecting the other parts of the device.

In order to notify the attendant should a fire occur in the lamp chamber C, I provide the cord N, which extends across the lamp chamber C, and has one of its ends connected to the casing and its other end connected to the clapper lever P, of a bell arranged upon the outside or inside of the casing. This cord N, is formed of a readily combustible material so that it will be quickly burned in two by a fire, and will release the lever P, which is actuated by a spring and permit the same to strike the gong.

It will be seen from the foregoing description taken in connection with the drawings that I have provided a highly efficient incubator of a cheap and simple construction and one that may be operated with but little expense.

Having described my invention, what I claim is—

1. In an incubator, the combination with the casing, having the openings *i*, the egg chamber, the lamp chamber, the lamp arranged in said chamber, and the air space connected with the egg chamber and communicating with the openings *i*, of the air induction pipe leading from the outside of the casing and through the lamp chamber and discharging at its inner end into the egg chamber, substantially as and for purpose specified.

2. In an incubator the combination with the casing having the lamp chamber, the egg chamber and the air space arranged between the egg and lamp chambers; of the removable boiler arranged above the egg and lamp chambers and carrying the pipes M, and L, substantially as and for the purpose specified.

3. In an incubator, the combination of the casing comprising the inner and outer walls and the non-conducting filling interposed between said walls; the removable cover, the lamp chamber, the egg chamber, the air space formed between said chambers, and communicating with openings in the walls of the casing and with the egg chamber, the air induction pipe leading from the outside of the casing through the lamp chamber and discharging into the egg chamber, and the removable boiler arranged above the lamp and egg chambers, all substantially as and for the purpose set forth.

CHAS. W. ROBINSON.

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