

(No Model.)

2 Sheets—Sheet 1.

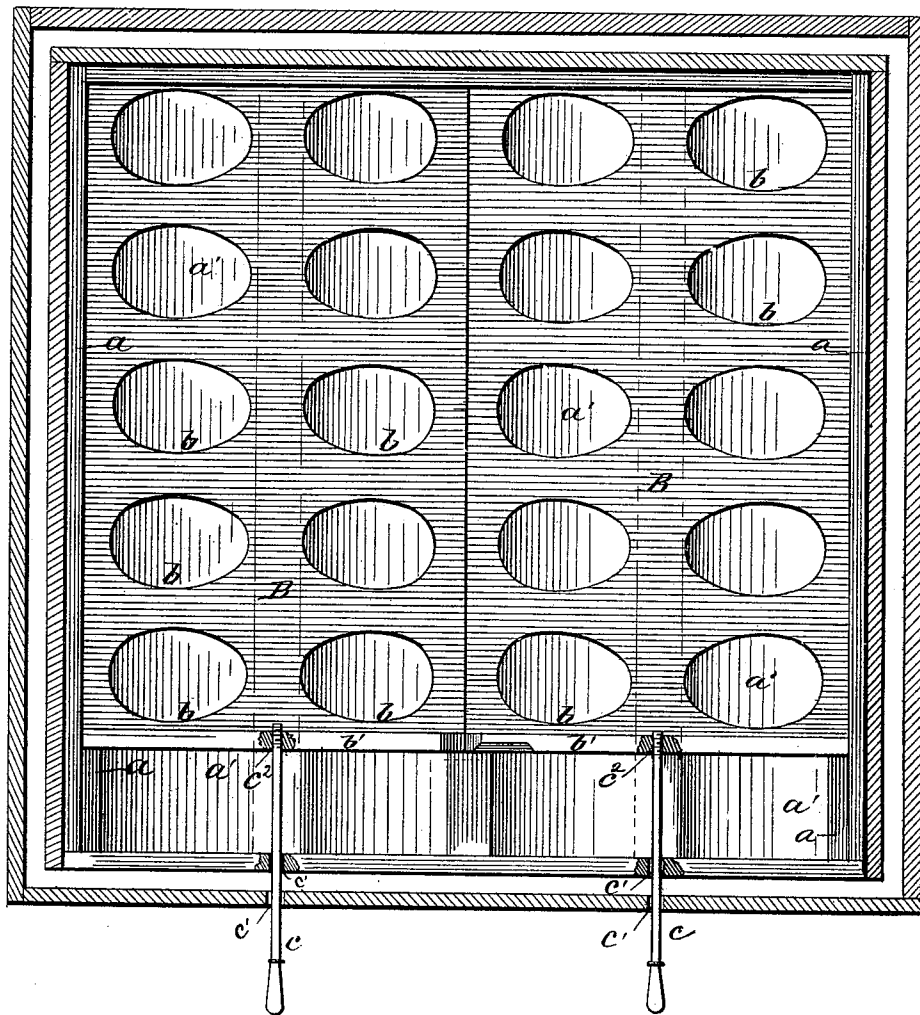
J. W. HILE.

EGG TRAY FOR INCUBATORS.

No. 404,041.

Patented May 28, 1889.

Fig. 1.



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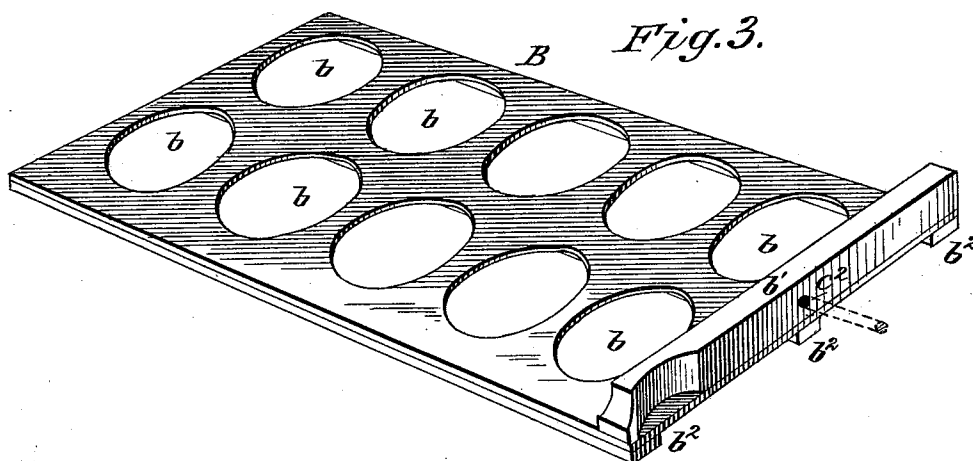
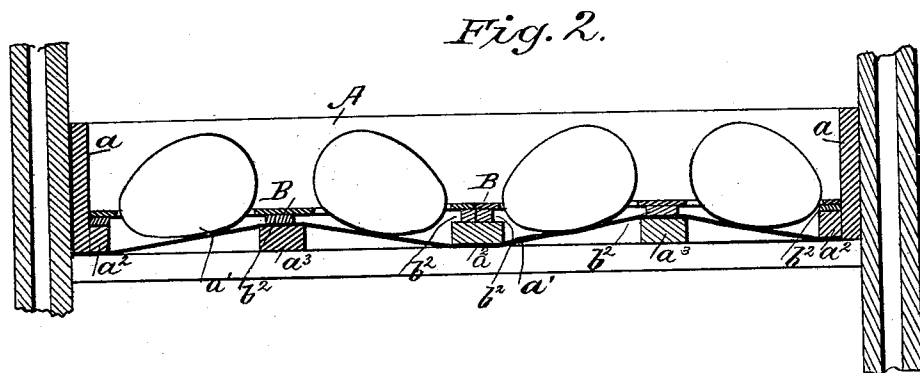
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2 Sheets—Sheet 2.

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EGG TRAY FOR INCUBATORS.

No. 404,041.

Patented May 28, 1889.



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UNITED STATES PATENT OFFICE.

JOHN W. HILE, OF VALLEY FALLS, KANSAS.

EGG-TRAY FOR INCUBATORS.

SPECIFICATION forming part of Letters Patent No. 404,041, dated May 28, 1889.

Application filed July 9, 1887. Renewed February 23, 1889. Serial No: 300,992. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. HILE, of Valley Falls, in the county of Jefferson and State of Kansas, have invented a new and useful Improvement in Egg-Trays for Incubators, of which the following is a specification.

My invention relates generally to incubators for artificially hatching fowls, and it relates particularly to improved means for turning the eggs without requiring access to the interior of the drawer or incubator-box, to improved means for holding the eggs in an inclined position with their large ends up and for turning them while held in this position, and to improvements in certain constructions and combinations of parts hereinafter described and particularly designated in the claims.

In the accompanying drawings, Figure 1 is a plan of an incubator-drawer fitted with my improved division-plate and egg-turner for incubator-drawers; Fig. 2, a cross-section through an incubator-drawer fitted with my improved egg-turner, having a specially-adapted bottom in said drawer with eggs shown held in inclined positions; and Fig. 3 is a plan of one section of the division-plate and egg-turner detached.

The drawer A of the incubator may be fitted to an incubating box or chamber in which the heat is admitted or generated in the upper portion of the box above the drawers.

The drawers A are formed of rectangular side strips, *a*, and a canvas or reticulated bottom, *a'*, preferably formed in a series of inclines by passing the fabric first under cross-strips *a²*, and then over cross-strips *a³*, secured to the bottom of the drawer, for supporting the eggs in an inclined position with their larger ends uppermost, as will hereinafter appear.

The division-board and egg-turner B is preferably made in a number of sections to each drawer, as shown in Fig. 1 of the drawings, to facilitate handling, and for easy removal from the drawer. The division-board B is made of thin board of any suitable material having egg-shaped or elliptical openings *b* therein running crosswise the drawer, having an end strip, *b'*, arranged transversely upon the upper front edge to stiffen the di-

vision-board transversely and provide a front end, and smaller or thinner strips *b²* secured longitudinally upon the under side of the division-board the entire length thereof between each of the rows of openings *b'* to stiffen the division-plate longitudinally and also raise it a slight distance above the surface of the bottom of the drawer, when flat-bottomed drawers are used, to admit a free circulation of air under the board around the lower part of the egg. The strips *b²* will reduce the friction when used with a drawer having a level-surfaced bottom, and will raise the plate higher on the eggs to move them more steadily.

Instead of using a sliding bottom, as heretofore employed for turning the eggs, which are held between cross-strips, I prefer to move the division-board within the drawer to turn the eggs by means of a rod, C, screw-threaded upon its end, which passes freely through the opening *c'* and screws into an opening, *c²*, in the strip *b'* upon the front end of the division-board, as the division-plates are made in a number of light sections and move the eggs by pressing upon the half-circumference of the sides of the eggs a sufficient distance above the bottom or bearing-surface of the egg to insure a free movement thereof within the drawers and thus prevent sudden jars, which are detrimental to successful incubation.

The division-board B will form double compartments in the egg-drawer to practically form double strata of air—one above and the other below the division-board—and keeps the eggs cooler upon the bottom than upon the top, as in natural incubation, and also keeps the temperature above more equal as the draft from below through the reticulated bottom of the drawer is shut off by the division-board to a great extent, but leaving a sufficient space between the eggs and the edges of the openings *b* to pass upward for the chicks and for circulation. The division-board B also furnishes a good surface for the chicks while hatching, as they are often injured when in their weak condition as they emerge from the shell, and their life destroyed by lying across slats, usually employed.

The division-board protects the cloth bottoms of the drawers beneath them from be-

coming soiled, and is easily removed to be cleaned and to clean the drawer.

When the division-board is applied to drawers having their bottoms formed with inclined surfaces, and the smaller end of the egg is held downward, the chickens may hatch out with their heads uppermost and in the larger end of the egg, and can more easily pick their way out in a natural position. As the mucus and water in the shell will settle in the lowest part of the egg, the chicks will not become strangled or drowned before they have emerged from the shell when held in an inclined position with the larger end uppermost.

With the above-described improvements a larger percentage of eggs will hatch out chicks in a stronger and healthier condition than when no provision is made for the objects of this invention.

It is obvious that instead of sliding the division-board within the drawer to turn the eggs, as above described, the bottom of the drawer may be made to slide and the division-board held stationary, as in cases where a slat-frame has been used instead of a division-board.

The division-boards may be made a trifle thicker and thus dispense with the strips beneath them.

The turners may also be used in egg-cabinets for turning the egg to keep the yolk from settling on one side.

The cross-strips a^2 , under which the canvas forming the bottom is passed, serve also as tracks upon which the division-boards are supported to slide freely and with but little friction, and which also prevent the thin division-boards from bending under the weight of the eggs partly held thereon.

I claim as new and desire to secure by Letters Patent—

1. In an incubator-drawer, the combination, with the side walls, a , and cross-strips a^2 , of the fabric a' , passed alternately under and over said cross-bars, substantially as and for the purpose described.

2. The combination of an incubator-drawer having inclined surfaces upon which the eggs are supported, and a division-board having egg-shaped openings into which the eggs are fitted and held in an inclined position, substantially as described.

3. The combination of an incubator-drawer having cross-strips a^2 a^3 , and canvas bottom a' , passed alternately under and over the said strips, and the division-board B, having egg-shaped openings and supported to slide upon the strips a^2 , substantially as herein shown and described.

JOHN W. HILE.

Witnesses:

C. W. ALLEN,
W. F. HICKS.