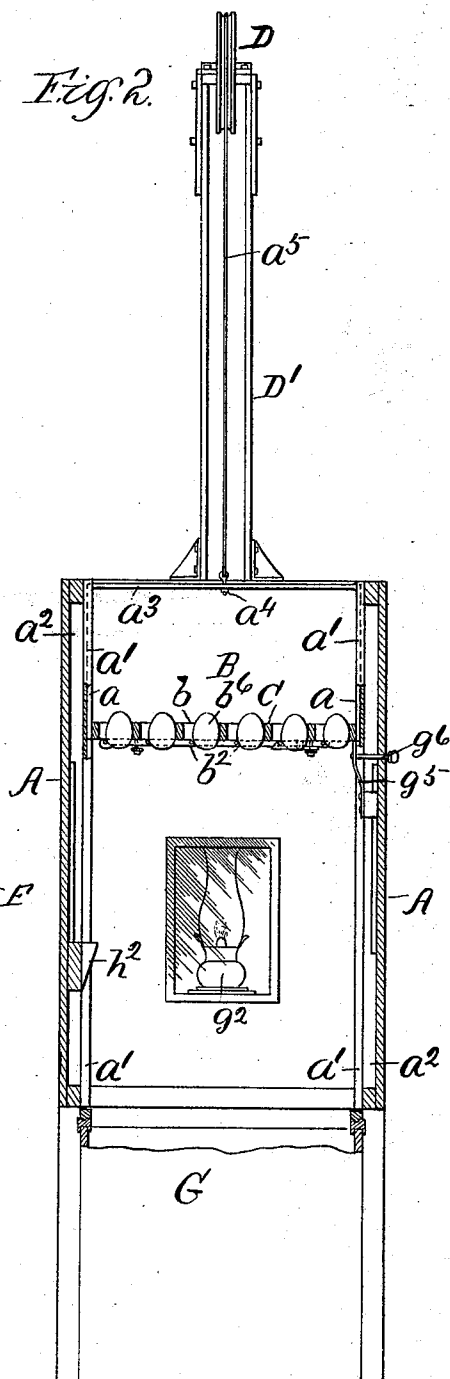
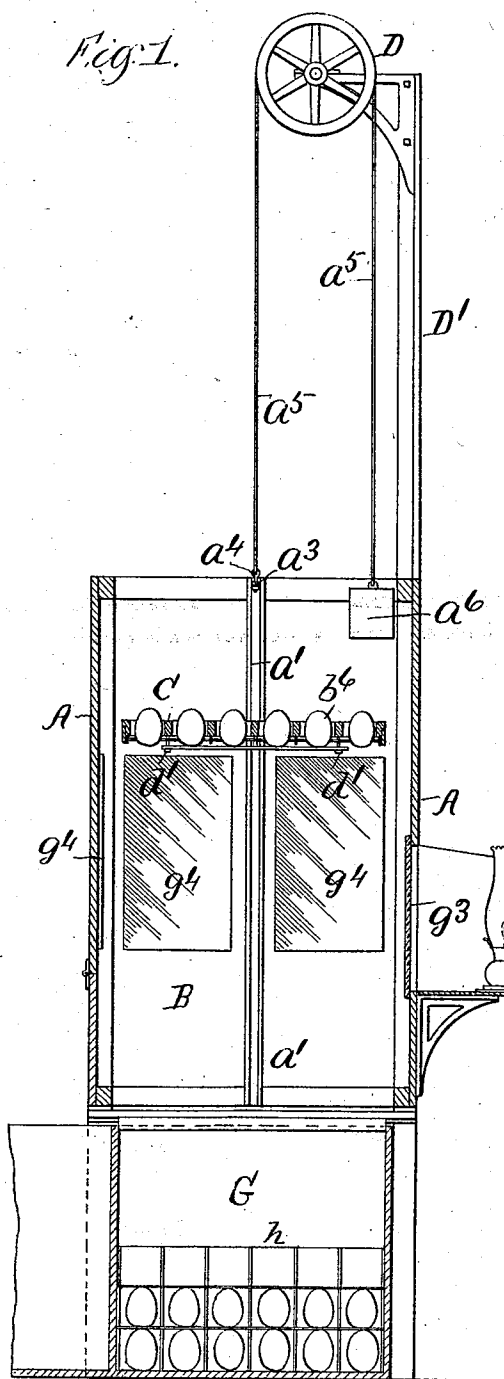


K. HAINZ & J. MACHEK.
EGG TESTER.

No. 548,803.

Patented Oct. 29, 1895.



Witnesses
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L. M. Freeman.

Inventors:
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Fig. 3.

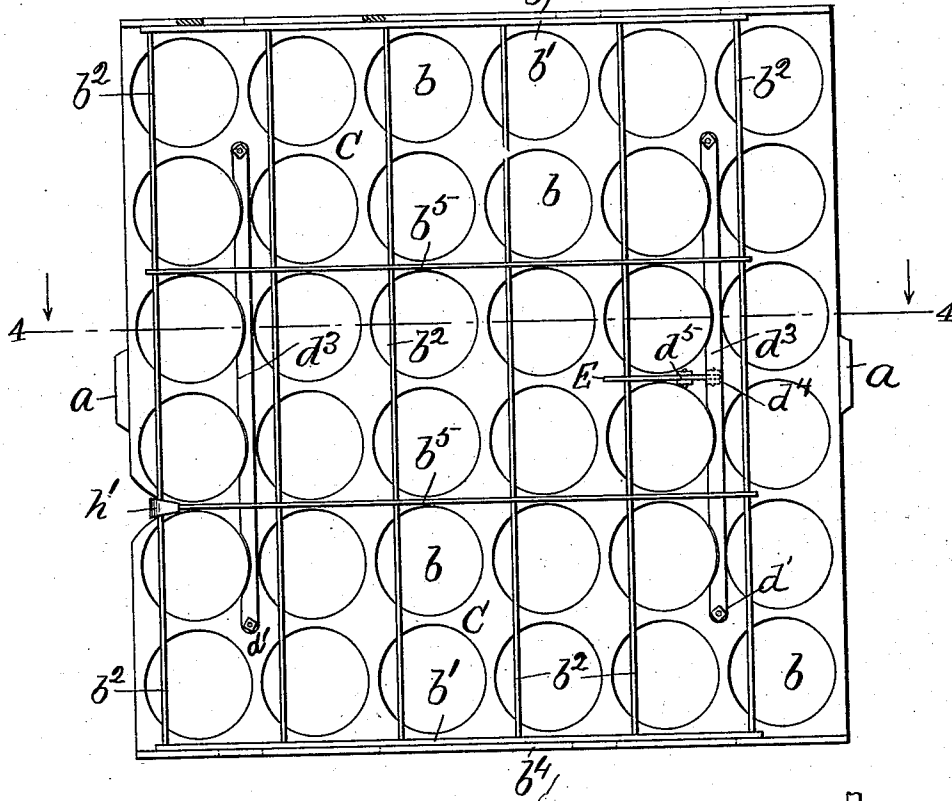


Fig. 4.

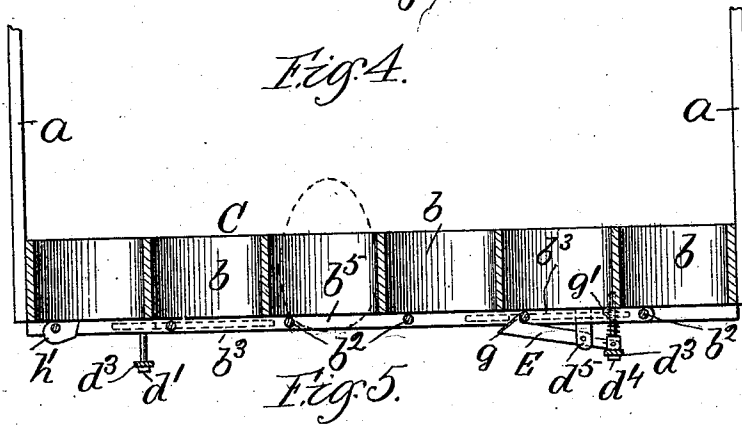
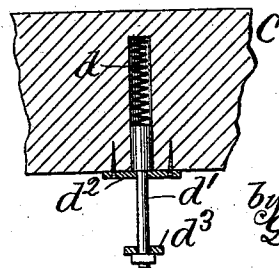


Fig. 5.



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UNITED STATES PATENT OFFICE.

KAREL HAINZ AND JAMES MACHEK, OF CHICAGO, ILLINOIS.

EGG-TESTER.

SPECIFICATION forming part of Letters Patent No. 548,803, dated October 29, 1895.

Application filed March 29, 1895. Serial No. 543,656. (No model.)

To all whom it may concern:

Be it known that we, KAREL HAINZ and JAMES MACHEK, citizens of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Egg-Testers; and we do hereby 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.

This invention relates to improvements in that class of devices used in testing or candling eggs, and has for its object to provide an arrangement of this character that will permit of the eggs being handled with facility and deposited in the shipping-case direct from the cell-tray in which they are inspected.

In the drawings, Figure 1 is a vertical section of a device embodying the improved features; Fig. 2, a similar view taken at right angles with reference to Fig. 1; Fig. 3, a plan of the under side of the testing-tray; Fig. 4, a transverse section of the testing-tray on line 4, Fig. 3, in a reversed position; and Fig. 5, a broken-away sectional detail of the testing-tray structure.

A is a box-receptacle inclosing the testing-chamber B, in which is movably located a cell testing-tray C. To opposite sides of this tray, Figs. 2 and 3, are connected vertical bars a , which fit into and are adapted to have a vertical sliding movement between stationary upright guide-bars a' , located opposite each other and supported out of contact with the inclosing sides of the box-receptacle, so as to provide a space a^2 back of the guide-bars. The upper ends of the bars a are connected by a cross-bar a^3 , through the longitudinal center of which is inserted an eyebolt a^4 , having one end of a cord a^5 connected thereto. This cord runs up to and down over a sheave D, journaled in the top of an upright frame D', extending upwardly from and supported on one side of the box-receptacle. To the opposite end of cord a^5 is attached a counterweight a^6 .

The testing-tray C is provided with a number of cells or openings b therein, which are large enough to permit of the eggs passing

therethrough. On the under side of this cell-tray and at opposite sides, Fig. 3, are placed horizontal companion bars b' , which are connected by a number of wires or rods b^2 , extending across below the bottom of the tray. The ends of some of these wires stop short in the bars b' , while others extend into grooves b^3 (indicated by dotted lines) in the two sides of the tray, and in that manner are loosely supported with reference thereto and adapted to have an endwise movement. The wires b^2 are connected and stiffened by two transverse strips b^5 . It will be noted that when the wires b^2 are in their normal position, as illustrated in Fig. 3, they extend across the egg-openings at one side of the center and prevent the eggs b^6 from dropping through, as shown in Figs. 2 and 3.

A number of springs d (four in this instance) are recessed in the testing-tray, Fig. 5, from the under side. The lower ends of these springs bear on the head end of a bolt d' , loosely retained in place by a cleat d^2 . The projecting end of the bolt or bolts d' is screw-threaded and each pair connected by a rigid bar d^3 . A bolt d^4 passes up through one of the bars d^3 near its longitudinal center and is inserted in the under side of the cell testing-tray.

A locking-lever E is pivoted to a lug d^5 , secured to and projecting downwardly from the testing-tray. One end of this lever is mounted on the bolt d^4 , the opposite end being provided with a catch g , detachably engaging with one of the wires b^2 , as shown in Fig. 4. A spring g' is coiled on bolt d^4 between the locking-lever and the bottom of the tray.

A case F is supported in position at one side of the box-receptacle. A lamp g^2 is seated in the case and throws light into the box-receptacle under the testing-tray through a transparent opening g^3 . A number of reflectors or mirrors g^4 are secured to the interior walls of the receptacle and aid in increasing the intensity of the light.

A gas-burner, an electric-light, or other suitable arrangement may be provided as a substitute for the lamp.

The testing-tray is retained in its normal position by a spring g^5 , secured inside of the receptacle. A handle-rod g^6 connects with this

spring and projects through to the outside and provides a hand-grasp for retarding the spring when the tray is lowered. Normally the spring remains in the supporting position
 5 shown, the tray on the up movement automatically forcing it outwardly until it has passed by, when the spring returns to its place. The counterpoise nearly balances the tray, so that the spring has but little weight
 10 to support.

A shipping-case G is located underneath the box-receptacle in line with the testing-tray and receives the eggs therefrom as they are tested.

15 In practice the testing-tray is filled with eggs introduced through the upper end of the receptacle, which are inspected by looking down from the top. The tray and contents are then lowered by a slight pull on the rod
 20 g^6 and the connecting weight-cord into the shipping-case, the companion bars d^3 coming in contact with and resting on top of the edges of the upper or empty tray, the series of springs breaking the concussion. At the same
 25 time the pressure of contact on the bar d^3 , bearing against the locking-lever E, forces the spring end of said lever upwardly and disengages the opposite end, locking the wires, when the weight of the eggs against the wires
 30 will force them over to one side, together with the horizontal-bar connections b' , and drop them into the tray h in the shipping-case. On the up movement the rounded end h' of one of the strips b^5 comes in contact with the
 35 beveled lug h^2 , Fig. 2, secured to the inside of the box-receptacle, and forces the series of wires back to their normal position to retain the next lot of eggs in the tray until inspected. The spring g' automatically returns
 40 the lever E to its locking position. By this arrangement a full tray of eggs—thirty-six—are tested at once and then all deposited in the shipping-case in bulk.

Having thus described our invention, what

we claim as new, and desire to secure by Letters Patent, is—

1. In an egg tester, the combination with a box-receptacle, of a testing-tray, provided with a number of cells or openings and adapted to have a vertical movement in said receptacle, the horizontal companion bars, having an
 50 endwise movement, a number of wires at right angles thereto connecting said bars and extending across the bottom of the cell openings, and the transverse strips, connecting the
 55 series of wires, substantially as described.

2. A cell-testing-tray, provided with a number of springs, recessed in the under side thereof, the bolts, having their head-ends bearing against said springs, a cleat, loosely retaining the bolts in place, and the bars, connecting the projecting threaded ends of said
 60 bolts, substantially as described.

3. A cell testing-tray, provided with a locking lever, pivoted to the under side thereof, the series of wires, the bar d^3 , a bolt, extending up through said bar and inserted in the under side of said tray, and a spring, coiled
 65 on said bolt, substantially as described.

4. In an egg-tester, the combination with a box-receptacle, of a testing-tray, inclosed therein, the companion endwise moving bars, the series of wires, connecting said bars, the strips b^5 , connecting said wires, and a beveled
 70 lug, secured to the interior wall of said receptacle with which the rounded end of one of said strips is adapted to have contact with on the up-movement of said tray and return said
 75 wires to their normal position, substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

KAREL HAINZ.
 JAMES MACHEK.

Witnesses:

L. M. FREEMAN,
 L. B. COUPLAND.