

No. 680,498.

Patented Aug. 13, 1901.

C. D. McKENZIE.  
EGG TESTER.

(Application filed Apr. 4, 1901.)

(No Model.)

Fig. 1.

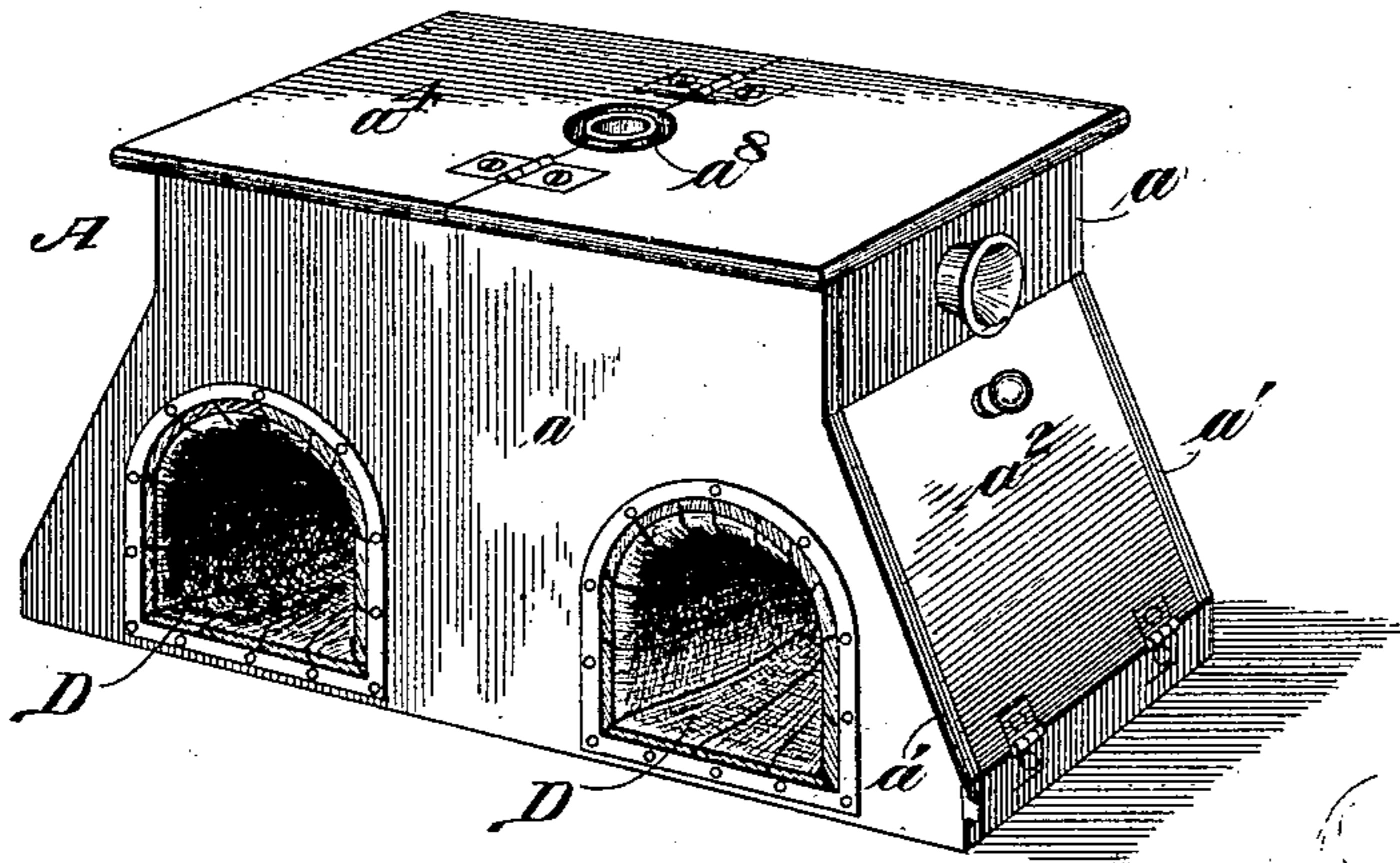


Fig. 2.

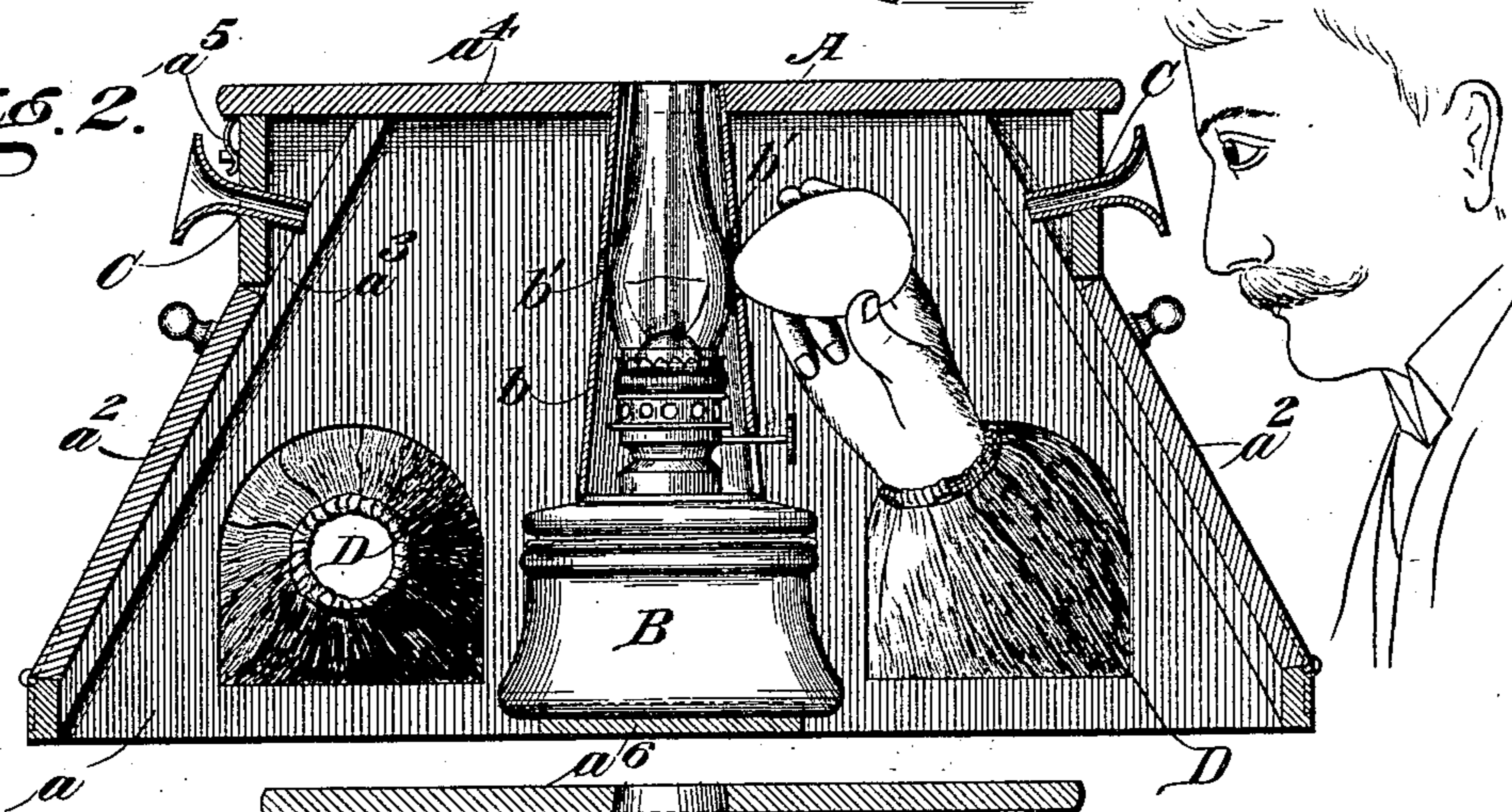
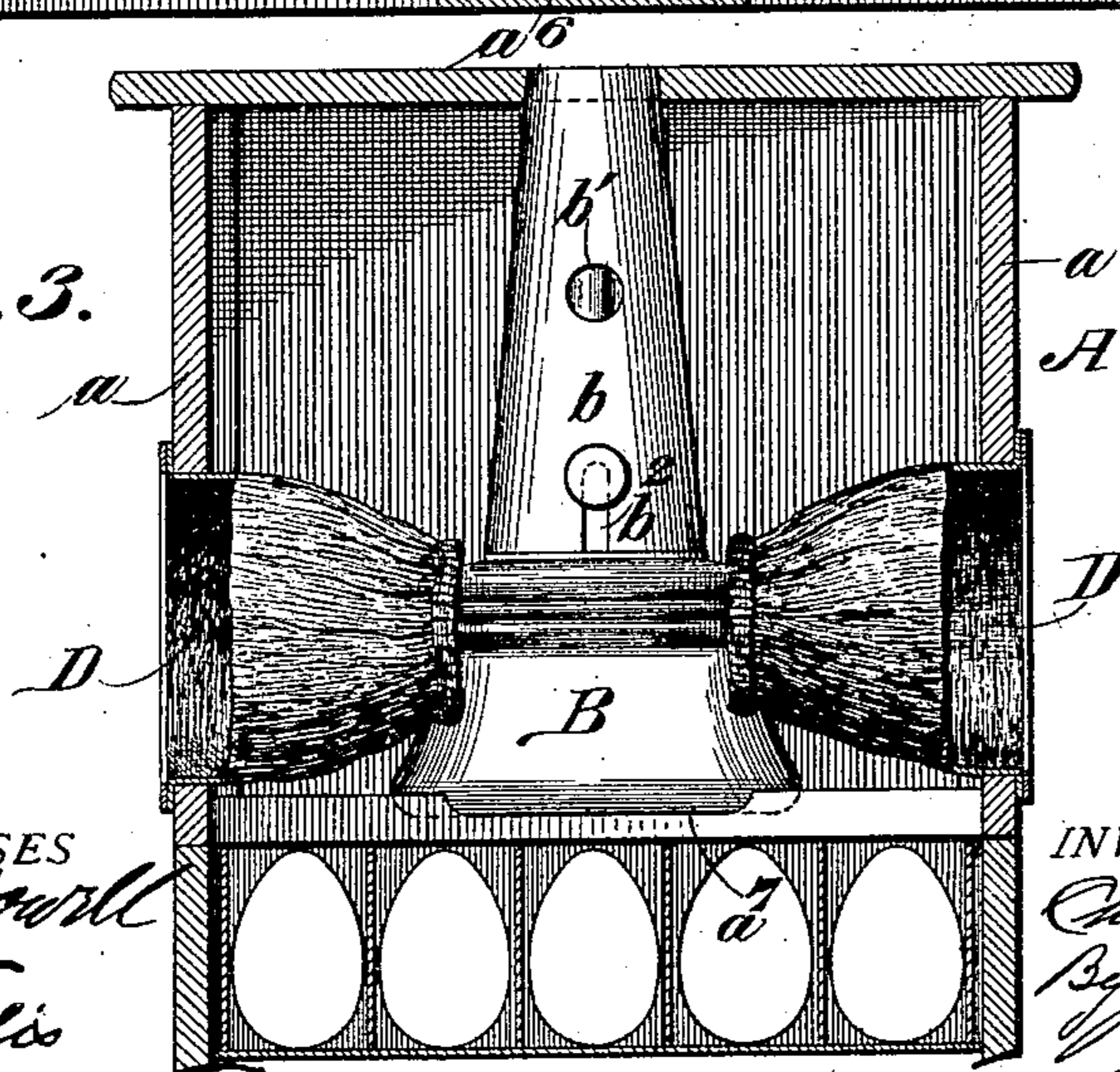


Fig. 3.



WITNESSES

*Robert H. Powell*  
*E. Everett Ellis*

INVENTOR

*Charles D. McKenzie*  
By *John C. Powell*  
His Attorney

# UNITED STATES PATENT OFFICE.

CHARLES D. MCKENZIE, OF SABINA, OHIO.

## EGG-TESTER.

SPECIFICATION forming part of Letters Patent No. 680,498, dated August 13, 1901.

Application filed April 4, 1901. Serial No. 54,327. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES D. MCKENZIE, a citizen of the United States, residing at Sabina, in the county of Clinton and State of Ohio, have invented certain new and useful Improvements in Egg-Testers; and I 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 ap-  
10 pertains to make and use the same.

This invention relates to egg-testers, and more particularly to devices of that type in which the eggs are examined against a light through an opening or peep-hole in a cham-  
15 ber or cabinet in order to observe their translucency, any cloudiness or opacity detected in the egg indicating a corresponding deterioration.

In many instances heretofore it has been  
20 necessary for proper determination of the quality of the eggs to conduct the "candling" or testing operation in a dark room in order to more accurately observe the light transmitted through the egg from the lamp or  
25 other source of light. As is well known, however, the excessive heat and offensive odor attending such operation renders the dark room extremely objectionable.

The primary object of my invention is to  
30 produce a simple, efficient, inexpensive, and convenient portable egg-testing apparatus of the character above described having means for effectively excluding the exterior light, while permitting the handling of the eggs  
35 within the cabinet or chamber by the operator, so that the device may be used with equal satisfaction either in the dark or open light and air, as desired, thus dispensing with the dark room.

A further object is to so construct the cabi-  
40 net or chamber as to bring the sight opening or aperture through which the eggs are inspected close to the light, thus reducing the length of projected light-ray, and thereby in-  
45 creasing the efficiency thereof in the testing operation, while at the same time allowing ample space and provision for the insertion and movement of the hand and forearm to elevate the eggs to a position before such  
50 sight-opening.

A further object is to construct the device so as to adapt it to be readily set over an egg-

case or other vessel in which eggs may be stored to permit the eggs to be placed in said egg case or vessel as they are tested (or picked  
55 up therefrom and held before the light) without withdrawing the hands from the chamber, and also to provide means for the insertion of cardboard and fillers into the egg-case when the eggs are being packed therein  
60 in successive layers without removing the device from said egg-case.

Other objects are to provide means for se-  
curely holding the lamp in position and for  
65 protecting the same, so as to prevent displacement or breakage thereof when the device is suddenly or roughly moved, to provide for readily inserting or withdrawing the lamp  
and for convenient access to any portion of  
70 the chamber, and to improve generally upon devices of this same general character heretofore in use.

The invention will first be hereinafter more particularly described with reference to the  
accompanying drawings, which form a part  
75 of this specification, and then pointed out in the claims at the end of the description.

In said drawings, Figure 1 represents a per-  
spective view of an egg-tester embodying my  
invention. Fig. 2 is a longitudinal vertical  
80 section thereof, showing also a person in the act of testing an egg, the hand being inserted within the chamber and holding the egg be-  
tween the sight-opening and the light; and  
Fig. 3 represents a vertical transverse section  
85 near one of the sight-openings, showing also a portion of the upper layer of an egg-case beneath the device.

Before proceeding to a more detailed de-  
scription it may be stated that the device in  
90 the form illustrated in the drawings is constructed to permit two persons to candle or test eggs at the same time, having provi-  
sion for the insertion of the hands of both, and two sight-openings disposed at opposite  
95 ends, it being, indeed, one great advantage of the present invention that it permits of the adoption of this double construction with but inconsiderably greater expense than a  
100 single construction.

Referring to the drawings by letters of ref-  
erence, A denotes the frame or casing which  
constitutes the closed chamber in which the  
eggs are tested.

B denotes the lamp, and C sight-openings or apertures in the casing, through which the eggs when held before the light are observed.

The casing or chamber A, which may be  
5 formed of wood or other suitable material, has the general construction of a closed oblong or rectangular box or apartment, the upper portion of which is of reduced length and the lower portion of extended length to  
10 provide inclined or slanting ends for a purpose hereinafter explained, the sides or side walls  $a$  of the casing having their ends, or portions thereof, upwardly inclined and converging toward the top, as at  $a'$ , to produce  
15 the desired construction. Preferably in each slanting end of the casing an opening is provided which may be closed by a removable cover or hinged door  $a^2$ , as shown, which door by virtue of its inclined position normally remains closed against suitable supports, as  $a^3$ , within the casing, the said doors thus affording ample access into the chamber. The top of the casing in the construction shown is divided and one part thereof  
25 hinged to the other to constitute a cover or door  $a^4$ , the purpose of which door  $a^4$ , as well as the doors  $a^2$ , will hereinafter appear. Suitable fastening means may also be provided, as at  $a^5$ , to retain the door  $a^4$  in closed  
30 position. The chamber is preferably bottomless, except midwise the ends thereof, where the side walls  $a$  may be connected by a narrow support  $a^6$ , recessed in its upper surface, as at  $a^7$ , to provide a seat for the lamp B or  
35 other source of light. The lamp fits closely in said recess, and its chimney projects through, but preferably not beyond, a suitable vent-opening  $a^8$  in the top of the casing and formed, preferably, partly in the fixed portion thereof  
40 and partly in the door  $a^4$ . Resting on the bowl of the lamp and surrounding the lamp-chimney is a shield or light-obscuring device  $b$ , of tin or other suitable material, having on opposite sides apertures  $b'$  of suitable size and at  
45 a proper height to receive the light from the most brilliant point of the flames, said shield, which is preferably conical for the purposes of stability and to properly fit around the lamp-chimney, serving to exclude the light  
50 from the chamber except where it projects in brilliant rays from the apertures  $b'$ . The top of said shield  $b$  preferably fits tightly the opening  $a^8$  in the top of the casing and flush therewith, and it will be observed that said  
55 shield thus serves to hold the lamp firmly in place on its support  $a^6$  or in the recess  $a^7$ , as well as to protect the chimney, thus preventing displacement or breakage when the apparatus is roughly handled or suddenly  
60 moved. However, when it is desired to withdraw the lamp, as for the purpose of supplying it with oil, the door  $a^4$  may be unfastened and raised, thereby releasing the conical shield  $b$ , whereupon the lamp can be with-  
65 drawn either through the top or the open bottom of the casing. A slot  $b^2$  may be formed in the lower end of the shield to adapt

the latter to fit over the wick-raiser, and said wick-raiser thus contributes to retain the shield in place and prevent rotation, so as to  
70 keep the light-apertures  $b'$  opposite the sight-openings. Besides the functions noted the shield  $b$  also serves as a lamp-chimney in itself, confining the heat and gases, which pass off through the top. Hence while I  
75 preferably employ a lamp having a regular burner and chimney, the chimney may be in some instances dispensed with, if necessary, or any equivalent device for producing the light-rays may be used. 80

The sight-openings C may be located at each end of the chamber above the inclined doors  $a^2$ , preferably, of course, on direct line with the flame and apertures  $b'$  in the conical shield  $b$ , and said sight-openings are thus  
85 brought close to the source of light, so that the length of light-ray projecting from the flame through the egg to the eye of the operator is reduced and its efficiency thereby greatly increased in the testing operation. 90  
The sight-openings are here shown as funnel-shaped pieces projecting through the casing, the outer flared ends thereof serving to comfortably fit the eye, though any suitable form or a mere aperture may be employed. 95

In each side of the casing and at both ends thereof or on opposite sides of the lamp are provided openings of suitable size and formation to comfortably admit the hands and fore-  
100 arms of the person or persons engaged in the testing operation, and said openings are provided with sleeves or inwardly-extending terminally-apertured covers D, of flexible or elastic material impervious to light, adapted to yield at their inner ends to admit the hands  
105 and to close about the wrist, so as to exclude all exterior light from the chamber, or, if desired, said sleeves D may be formed of any suitable light-proof material, gathered at their inner ends by elastics, so as to close about the  
110 operator's wrists, for the purpose stated.

The cabinet or tester being placed upon a table or other support to shut out the light from the bottom of the chamber, it will be apparent that a person may insert his arms into  
115 the chamber and hold an egg between the light and the eye at the sight-opening, as shown in Fig. 2, thus inspecting its translucency in the usual manner without the necessity of resorting to the dark room. The for-  
120 mation of the closed casing having its upper portion of reduced length brings the eye very near to the source of light, as before mentioned, so that the slightest defect or deterioration in the egg is glaringly exposed and eas-  
125 ily detected, while at the same time, by reason of the enlarged lower portion of the chamber, ample space is provided for the insertion and free movement of the hands and fore-  
130 arms below the sight-openings for the purpose of handling the eggs within the chamber or disposing of them after testing. The exterior formation is also entirely conformable to the attitude most naturally and eas-

ily assumed by a person on sitting down to the cabinet for the purpose of testing.

In practical use, as in testing a quantity of eggs prior to packing in cases, the device may be set over an egg-case, as illustrated in Fig. 3, and the operator may while holding in one hand a vessel of eggs with the other hand hold the eggs to the light and test them, one after another, placing them in the several compartments of the egg-case as they are tested without withdrawing his hands from the chamber, the lower enlarged formation of the casing and the flexible sleeve permitting the operator to easily extend his hands into any part of the egg-case below. When the eggs are packed in a case in successive layers and cardboard and fillers are employed, such cardboard and fillers may be inserted, after each layer is completed, through the openings closed by the inclined doors  $a^2$  without removing the device from the egg-case, ample space being left for the insertion of said cardboard and fillers between the lamp and said openings by reason of the lower extended ends of the casing. It will be further observed that the device comprises but a single chamber or casing containing the lamp, arm-openings and sleeves, and sight-openings, and hence may be constructed to occupy a minimum of space, and said device is, moreover, simple in design and inexpensive in construction.

The invention may be embodied in the single form or constructed to accommodate but one operator at a time, if desired, in which embodiment the casing is preferably cut off and closed at one end immediately next to or behind the lamp. The device is also susceptible of various modifications without departing from the scope of my invention.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. An egg-tester consisting of a bottomless chamber, a lamp supported within said chamber, and a shield inclosing said lamp having an aperture for light-rays, said chamber having a sight-opening in proper alinement with the aperture in said shield, and a lower opening for insertion of the hand; substantially as described.

2. An egg-tester consisting of a bottomless chamber, a lamp supported within said chamber, and a shield inclosing said lamp having an aperture for light-rays, said chamber having a sight-opening in proper alinement with the aperture in said shield, and a lower opening having an inwardly-extending flexible sleeve for encircling the wrist so as to exclude the light through said opening; substantially as described.

3. In an egg-tester, a cabinet or casing of oblong form approximating the form of a frustum of a pyramid having two sides thereof substantially of the form of a trapezoid, a light within the cabinet, and an opaque shield inclosing the light and having an aperture

for light-rays; said cabinet having a sight-opening in the end wall in proper alinement with said aperture in the shield, and openings for insertion of the hands in the lower portions of said trapezoidal sides, substantially as described.

4. In an egg-tester, a cabinet or casing of oblong form approximating the form of a frustum of a pyramid having two sides thereof substantially of the form of a trapezoid, a light within the cabinet, and also an opaque shield therein inclosing the light and having an aperture for light-rays; said cabinet having a sight-opening in the end wall in proper alinement with said aperture in the shield, and openings provided with flexible inwardly-extending sleeves for the insertion of the hands in the lower portions of said trapezoidal sides, substantially as described.

5. In an egg-tester, a cabinet or chamber of oblong form approximating the form of a frustum of a pyramid having two sides thereof substantially of the form of a trapezoid, a light within said chamber, and an opaque shield inclosing the light having oppositely-disposed apertures for light-rays; said chamber having sight-openings in the ends thereof substantially in line with the apertures in said shield, and openings in the lower portions of said trapezoidal sides having covers consisting of flexible sleeves extending within the casing and having distensible inner ends for the insertion of the hands; substantially as described.

6. In an egg-tester, a bottomless cabinet or casing having its side walls downwardly increasing in length to form an end extension of the cabinet, a light supported within the cabinet, a shield inclosing the light and having an aperture for light-rays, said cabinet having a sight-opening in the upper portion of its end wall, and openings for insertion of the hands in the lower extended portions of the side walls; substantially as described.

7. In an egg-tester, a bottomless cabinet or casing having its side walls downwardly increasing in length to form an end extension of the cabinet, a light supported within the cabinet, a shield inclosing the light and having an aperture for light-rays, said cabinet having a sight-opening in the upper portion of its end wall, and openings provided with flexible inwardly-extending sleeves for insertion of the hands, in the lower extended portions of the side walls; substantially as described.

8. In an egg-tester, a bottomless cabinet or casing having its side walls downwardly increasing in length to form an end extension of the cabinet, a light supported within the cabinet, a shield inclosing the light and having an aperture for light-rays, said cabinet having a sight-opening in the upper portion of its end wall, and a door beneath the same, and openings for insertion of the hands in the lower extended portions of the side walls; substantially as described.

9. In an egg-tester, a cabinet or casing having an open bottom and downwardly increasing in length to form a lower end extension, a light within the casing, and a shield inclosing said light having an aperture for light-rays, an opening in the lower inclined end of the casing and a removable cover therefor, a sight-opening in said end above said cover, openings in the sides of said casing for insertion of the hands, and distensible sleeves covering said openings; substantially as described.

10. In an egg-tester, a cabinet or chamber having a vent-opening in its top, a lamp located beneath said vent-opening, a support therefor, and an apertured shield resting on the lower portion of said lamp and inclosing the burner thereof, the upper end of said shield fitting tightly said vent-opening, where-

by said lamp is maintained in position; substantially as described.

11. In an egg-tester, a cabinet or chamber having a portion of its top removable, and having a vent-opening in said top formed partly in the removable and partly in the stationary portions thereof, a lamp within the chamber supported beneath said vent-opening, and a shield resting on the lower portion of said lamp and inclosing the burner, said shield having its upper end tightly fitted in said vent-opening; substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES D. MCKENZIE.

Witnesses:

RUFUS FERRELL,  
A. E. MCCARTNEY.