Dec. 30, 1941. H. A. MULVANY 2,267,834

CANDLING LAMP

Filed June 30, 1939

Fig. 1.

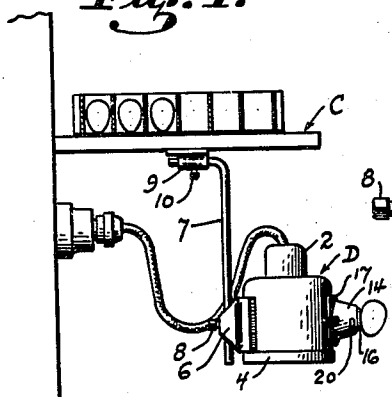
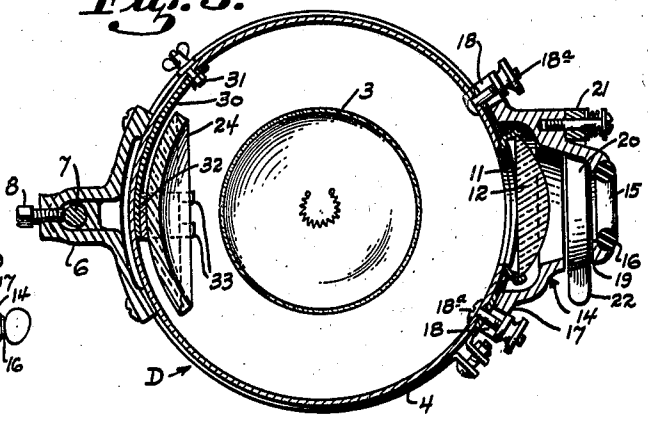


Fig. 3.



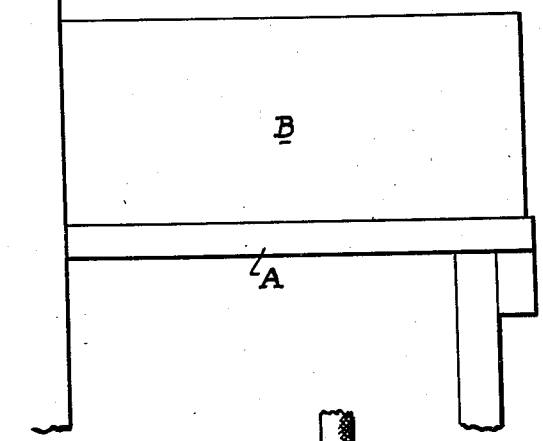


Fig. 4.

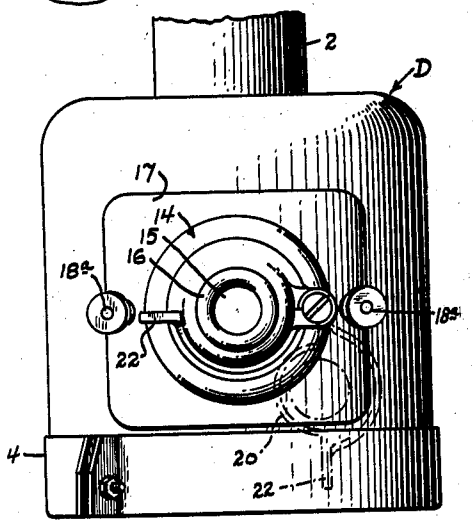


Fig. 2.

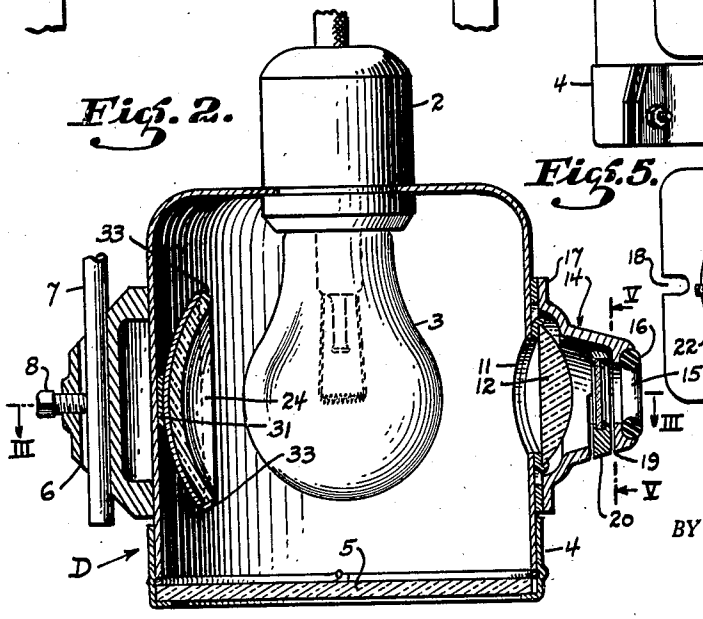
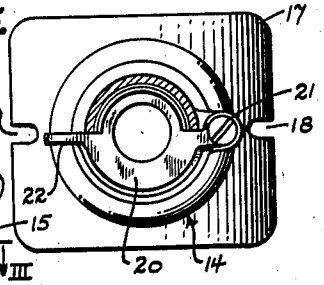


Fig. 5.



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CANDLING LAMP

Harry A. Mulvany, Berkeley, Calif.

Application June 30, 1939, Serial No. 282,056

1 Claim. (Cl. 88—14.92)

This invention relates to a lamp particularly intended for use in the candling and inspection of eggs.

The object of the present invention is generally to improve and simplify the construction and operation of candling lamps; to provide a lamp which is adapted to be disposed above a table or bench upon which a case of eggs is placed, and which is provided with a light-emitting opening at the lower end to illuminate fully the eggs in the case, and which is also provided with a second opening on one side, which is utilized for the candling of eggs one by one; to provide a reflector and cooperating lens for concentrating and directing an intense beam of light through the candling opening; to provide, in conjunction therewith, filtering means for screening or filtering out injurious or undesirable rays; and further, to provide a candling lamp in which all parts are readily accessible and removable for cleaning, inspection and repair.

The candling lamp is shown by way of illustration in the accompanying drawing, in which—

Fig. 1 is an end view of an candling table and shelf, showing the candling lamp disposed above the bench in a suitable position for inspection and candling of eggs;

Fig. 2 is an enlarged central vertical longitudinal section of the lamp;

Fig. 3 is a cross section taken on line III—III of Fig. 2;

Fig. 4 is a front view of the lamp; and

Fig. 5 is a cross section taken on line V—V of Fig. 2.

Referring to the drawing in detail, and particularly to Fig. 1, A indicates a bench or table provided for the reception and support of a case of eggs such as indicated at B. Above the table is a shelf C upon which may be placed fillers, pads, rejected eggs, etc., and suspended from the shelf is the candling lamp D forming the subject matter of this invention.

The lamp proper comprises a vertically disposed cylindrically shaped housing D, closed at the upper end, and provided with a socket 2 to receive a suitable form of incandescent lighting globe or bulb 3. The outer end of the housing is surrounded by a split clamping collar 4 which retains and secures a lens 5. The kind of lens employed will depend upon the particular type of inspection which is being performed, and as such may not only function as a lens to project a diffused beam of white light, but it may also function as a filter or screen to eliminate certain rays, as will hereinafter appear.

On the rear side of the lamp housing is secured a bracket 6 through which extends a rod 7 secured by means of a set screw 8. The upper end of the rod is bent to form a right-angular turn, and extends through a bracket 9 secured to the lower side of the shelf, the rod being secured in the bracket by a set screw 10. By this mode of suspension the lamp may be raised or lowered as desired, and it may also be swung from side to side, to assume an angular position, if desired. In the front part of the lamp housing is formed an opening 11, and in front of the same is placed, and suitably secured, a lens 12, which is covered by a lens housing generally indicated at 14. This housing is substantially cone-shaped, and is provided with a light-emitting opening 15 at its outer end. This opening is provided for candling purposes, and is surrounded with a rubber gasket 16 to form a cushion against which the eggs may be placed without danger of breaking them. The lens housing is provided with a base flange 17 which fits the rounded outer contour of the lamp housing. The flange is slotted at opposite sides as indicated at 18 to permit straddling of a pair of threaded bolts 18a. Nuts are applied to engage and clamp the flange against the main lamp housing, thus detachably securing the lens housing with relation to the lamp housing, to permit quick and ready removal whenever desired. A cross-slot 19 is formed on the lower side of the lens housing to receive a filter screen 20. This screen is pivoted to a lug 21 formed on one side of the lens housing, and it is also provided with a lug 22 whereby the screen may be grasped to swing it into or out of the lens housing, as desired.

The candling of eggs is best accomplished by an intense beam of white light; this is the reason for employing a lens 12 of the condensing type. In addition thereto, a reflector 24 may be employed to direct as much light as possible into the lens, and finally through the candling opening 15. Any suitable type of light-gathering reflector may be used, for instance a parabolic reflector, as here shown. A simple support for the reflector is obtained by providing an arm 30, secured at one end of the lamp housing by a rivet or removable bolt 31. The opposite end of the arm carries a cross-arm 32 which extends across the rear surface of the reflector and secures it by means of bendable clips 33 formed at the outer ends. This support, together with the reflector, may be readily removed by merely releasing the bolt 31, thereby permitting the interior surface of the lamp housing to be wiped

out and cleaned from time to time, this being important as the whole interior surface may be plated and polished, or may be coated with white enamel or the like, to function as a reflecting surface for the lower lens **5**. In fact, all structural details of the lamp are arranged for accessibilty to permit ready cleaning, inspection, adjustment and repair of all parts. For instance, by releasing the clamping ring **4**, the lower lens **5** may be removed to permit cleaning or wiping of the interior; also this permits cleaning or removal of the lamp bulb **3** and wiping of the reflector **22**. Again, by merely releasing the two thumb-screws or nuts **18a**, the lens housing **14** can be removed, and the condensing lens **12**, together with the interior of the lens housing, may be cleaned, etc.

In actual practice, a case of eggs such as shown at B will be placed on top of the table A. The operator or inspector employed will stand in front thereof, and the lamp D will be adjusted vertically on the road **7** to bring the candling opening to approximate alignment with the eyes of the operator. The white diffused light projected downwardly through the lens **5** gives ample illumination for general inspection of the eggs. Any eggs which look at all suspicious can be removed and placed in front of the candling opening and twirled and candled in the usual manner. Defective eggs may be removed and placed on top of the shelf C, and so may the fillers, pads, etc. That is, the operator will have both ends of the table, and also the shelf, upon which to place eggs and fillers while working on a case.

In some instances it is also desirable to inspect the eggs to determine if they have been washed. The chicken ranchers who produce the eggs and bring them to the poultry producers' associations or similar buyers are instructed that eggs soiled in any manner must not be washed, as the keeping property of an egg when washed is very materially reduced. The chicken ranchers obtain a slightly reduced price for so-called soiled or dirty eggs, and for this reason there is a temptation to wash the eggs in order to place them in the higher price grade. I have discovered that if a filter screen be placed at the point **5** which will screen out all but the ultra-violet rays, or if I provide the housing with a lamp specifically constructed for the emission of ultra-violet rays, when a washed egg is exposed to the ultra-violet rays the washed spot on the egg will fluoresce; such a spot is not visible to the naked eye, but is clearly to be seen when exposed to the ultra-violet rays. It is for this reason that means for ready changing of the lens **5** must be provided. It is also for this reason that a filter screen **20** should be employed, to screen out the injurious ultra-violet rays when the candling opening is in use.

While certain features of my invention have been more or less specifically described and illustrated, I nevertheless wish it understood that changes may be resorted to within the scope of the appended claim, and that the materials and finish of the various parts may be such as the manufacturer desires, or as conditions of use demand.

Having thus described and illustrated my invention what I claim and desire to secure by Letters Patent is:

In a candling lamp for testing eggs, the combination comprising a lamp housing, an electric bulb in said housing, said housing having a light aperture in its bottom through which light may be cast downwardly, the housing also having a light aperture through which light rays may pass horizontally, a condenser lens in said last named aperture, a conical lens housing enclosing the condenser lens, said lens housing having a base flange surrounding said last named aperture, said flange having radial slots, lock screws fitting said slots and secured to the lamp housing whereby the lens housing is readily detachable, said lens housing having its outer open end reduced in diameter to substantially that of an egg to be tested, and means for removably positioning a ray filter between the lens and the open end of the lens housing.

HARRY A. MULVANY.