July 16, 1935. W. R. SIMONTON 2,008,567

APPARATUS FOR USE IN INSPECTING BOTTLES OR OTHER ARTICLES

Filed Dec. 19, 1932

Fig. 1.

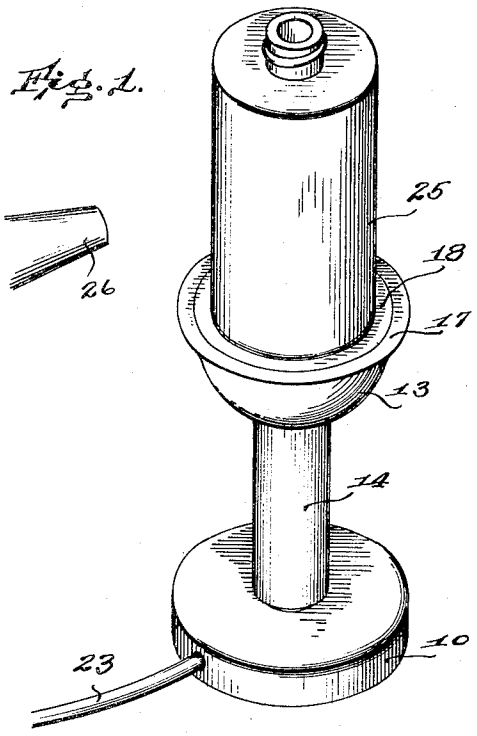
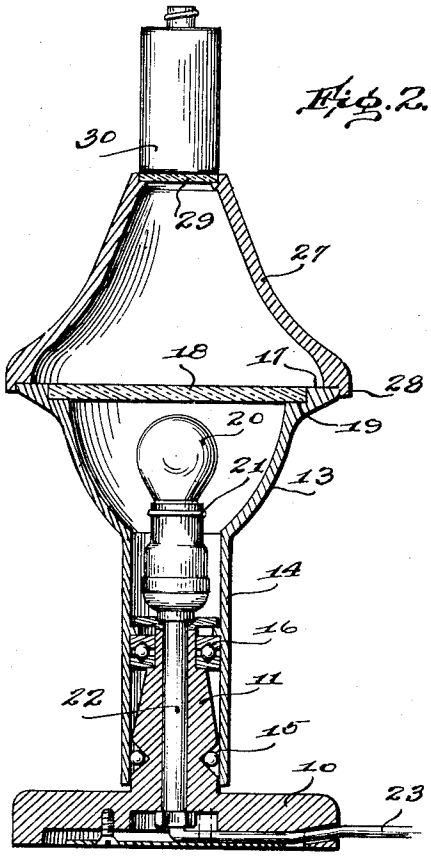


Fig. 2.



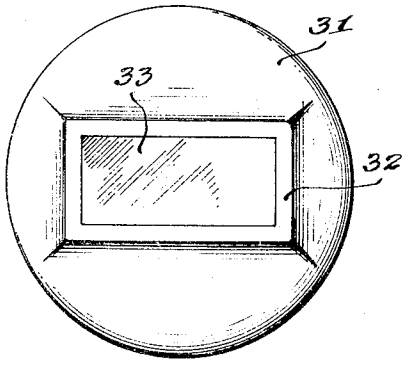


Fig. 3.

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UNITED STATES PATENT OFFICE

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APPARATUS FOR USE IN INSPECTING BOTTLES OR OTHER ARTICLES

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Application December 19, 1932, Serial No. 647,880

3 Claims. (Cl. 88—14)

My invention relates to apparatus for use in inspecting glass bottles or other transparent articles and particularly to enable persons, during or after the operation of spraying or coating such articles with some kind of color or finishing material, to determine the density of the coloring solution or the like and when the same has been evenly and uniformly applied to the surface which is being treated.

An object of the invention is to provide a simple and practical apparatus adapted to illuminate the interior of the article which has been or is being surface treated so that the relative density of the coating on all portions of the surface which is being treated is plainly apparent to the operator.

A further object of the invention is to provide an apparatus of the character indicated which may be readily adapted for the inspection of articles of different sizes and shapes.

Other objects of the invention will appear hereinafter.

Referring to the accompanying drawing:

Figure 1 is a perspective view of an apparatus constructed in accordance with my invention, a bottle being shown positioned on said apparatus for inspection.

Fig. 2 is a sectional elevation showing the apparatus with an adapter mounted thereon to permit the inspection of a smaller size bottle shown in position on the adapter.

Fig. 3 is a plan view of an adapter designed for use with rectangular or panel bottles.

The apparatus comprises a stationary base 10 having a central stem 11 projecting upward therefrom. A body 13 formed with an integral depending hollow shank 14 surrounding the stem 11, is mounted for rotation about the vertical axis of said stem. Ball bearings 15 and 16 are interposed between the shank 14 and the stem 11. The body 13 is in the form of a bowl having a flat annular top surface 17. A flat circular glass top plate 18 is removably seated in an annular recess 19 formed in the top portion of the bowl, the upper surface of said plate 18 being flush with the surface 17. An electric lamp bulb 20 is located within the bowl 13. The lamp bulb is mounted in a socket 21 carried on a vertical shaft 22 extending upward through the stem 11. Electric current is supplied through a cord 23 to the lamp which illuminates the interior chamber formed by the bowl 13.

The article to be inspected, as, for example, a glass bottle 25, is placed on the glass plate 18 so that the light is transmitted through said plate and the transparent bottom of the bottle, thereby illuminating the interior of the bottle. While the bottle is thus illuminated, the operator may apply a coating of color or finishing material to the exterior surface of the bottle. A spray gun 26 (Fig. 1) may be used for this purpose. While such surfacing material is being applied, the holder 13 with the bottle thereon may be rotated either by hand or by suitable mechanical means to facilitate the application of the coloring material or the like to the entire exterior surface of the bottle or any desired portion thereof. The interior lighting of the bottle discloses to the operator the density of the coloring material or the like at all points on the surface to which it is applied and thus enables him to uniformly apply the material or even it up where there is lack of uniformity. The apparatus may also be used as a means for inspecting bottles or other articles where the color or surfacing material has been applied as a separate operation, and serves to determine any lack of uniformity or other defects in the surfacing material. The apparatus is, moreover, adapted for inspecting ware for the purpose of discovering various defects which may exist apart from any coloring or other surface treatment of the ware.

Figure 2 shows the use of an adapter 27 as an auxiliary to permit inspection of ware of a different size or shape. The adapter, as shown, consists of a hollow body in the shape of a bell or truncated cone. The adapter seats on the top 17 and is centered thereon by an annular flange 28. A glass plate 29 is seated in the top surface of the adapter. The plate 29 may be circular or other shape, the size and shape being adapted to the bottles 30 or other articles placed thereon for inspection. As the bowl 13 and adapter 27 are made of opaque material, the light is transmitted only through the glass plates 18 and 29, so that the interior only of the bottle 30 is illuminated.

Figure 3 shows an adapter 31 which may be similar in construction to the adapter 27, except that the top 32 is of rectangular form to receive a rectangular glass plate 33. It is thus adapted to support for inspection panel bottles or other articles rectangular in cross section. By providing suitably shaped adapters, the apparatus may be used for inspecting articles of any size or shape through a wide range.

Modifications may be resorted to within the spirit and scope of my invention.

I claim:

1. The combination of a base, a bowl mounted thereon for rotation about a vertical axis, said bowl having a flat top of transparent material forming a seat for an article to be inspected, an electric lamp within said bowl and supported on said base, and an adapter removably mounted on said bowl, said adapter being of hollow conformation and provided with a transparent top forming a seat for an article to be inspected.

2. An inspecting device comprising, in combination, a base, a lamp mounted thereon, a rotary member comprising an opaque bowl enclosing said lamp, said bowl being mounted on the base for rotation about a vertical axis, a transparent removable flat top for said bowl, and an adapter comprising a hollow body open at the bottom removably seated on the top of said bowl, said adapter having a transparent top to provide a support for an article to be inspected.

3. An inspecting apparatus comprising, in combination, a stationary base, an electric lamp having a stationary mounting thereon, a bowl mounted on the base for rotation about a vertical axis, said lamp being positioned within the bowl, the top of said bowl being constructed to support a bottle or other article for inspection, and an adapter removably mounted on said bowl, said adapter being of hollow conformation and having a top surface portion constructed to provide a seat for an article to be inspected and to permit such article to be illuminated by the light supplied from said lamp.

WARREN RAY SIMONTON.