March 14, 1967 R. C. LE SUEUR ETAL 3,309,159

ELECTRIC TOOTHBRUSH SANITIZER AND CHARGER

Filed Nov. 12, 1965 2 Sheets-Sheet 1

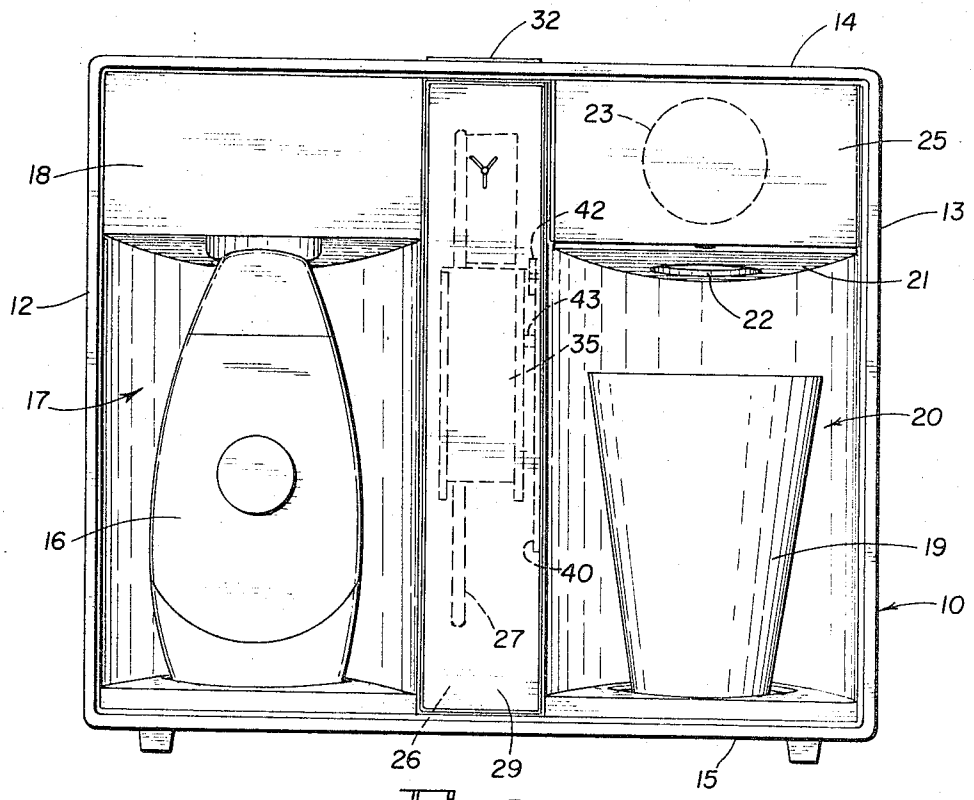

Fig_1

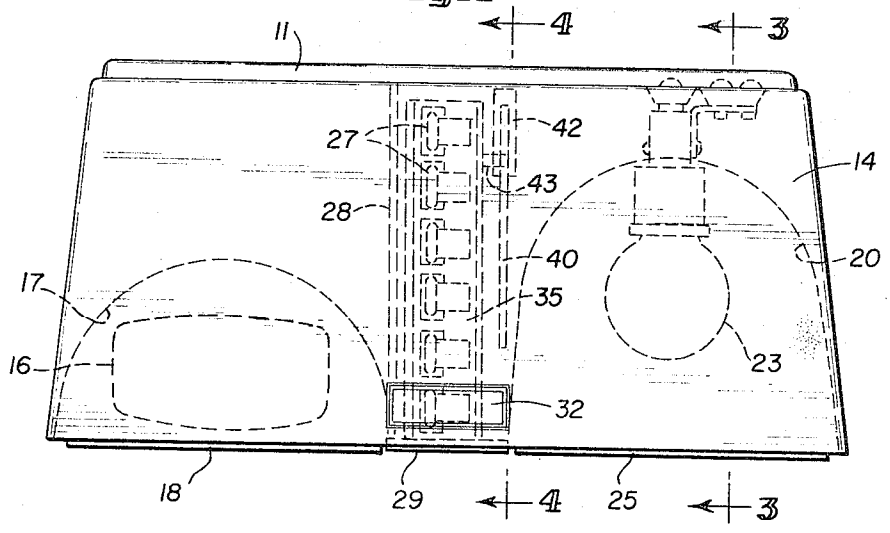

Fig_2

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ELECTRIC TOOTHBRUSH SANITIZER AND CHARGER

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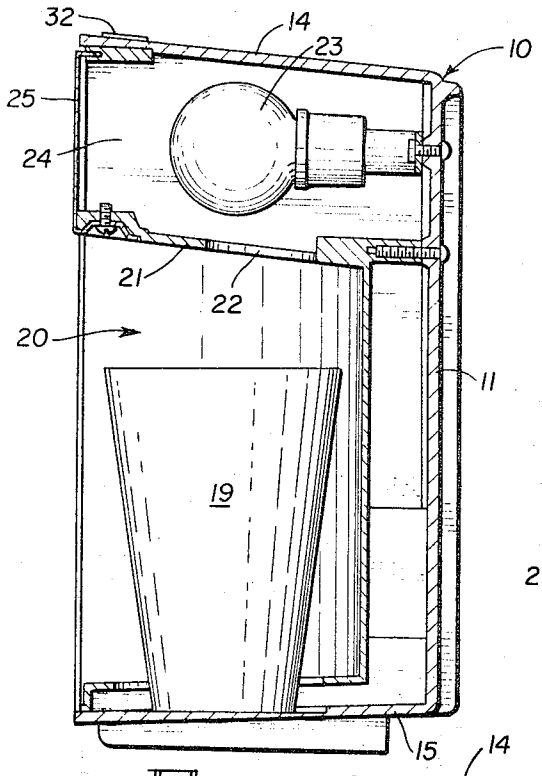

Fig_3

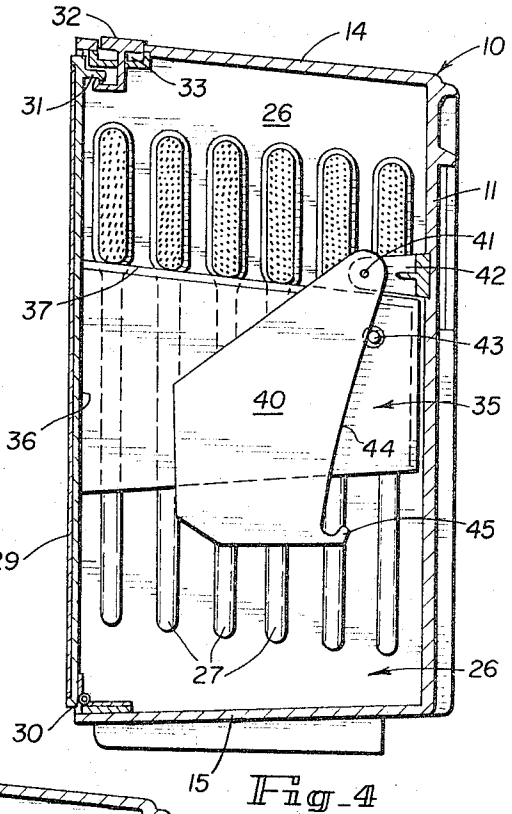

Fig_4

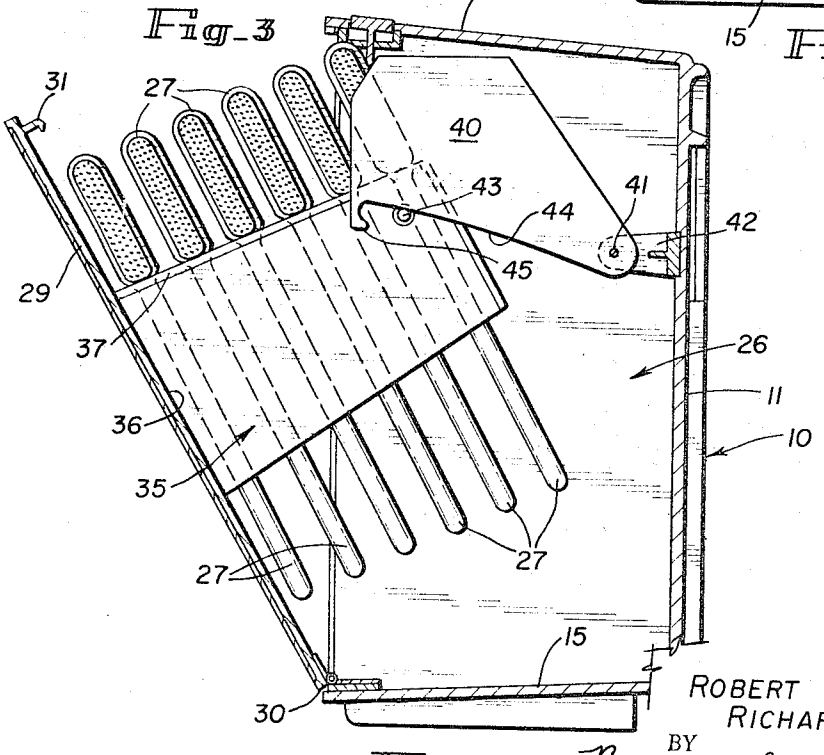

Fig_5

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United States Patent Office 3,309,159
Patented Mar. 14, 1967

3,309,159

ELECTRIC TOOTHBRUSH SANITIZER AND CHARGER

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Filed Nov. 12, 1965, Ser. No. 507,489
6 Claims. (Cl. 312—206)

This invention relates to a toothbrush sanitizer and charger particularly adapted for housing a cordless electric toothbrush holder, charging means therefor, a plurality of brushes intended for interchangeable mounting in the brush holder, a drinking glass, and an ultra violet light bulb for sanitizing the brushes and drinking glass.

The main object of the invention is to provide means for housing the toothbrushes in an enclosed chamber when not in use, in such positions that the bristles face an ultra violet light bulb and receive the sanitizing rays emitted by the bulb.

Another object of the invention is to provide the brush chamber with a hinged door which is readily accessible to the user for manually opening the door and exposing the plurality of brushes for quick removal.

Another object is to mount the brushes in such manner that they are carried forward by the door out of the housing so that each of the brushes is accessible for removal and, further, to provide means actuated by the opening of the door for shielding the ultra violet light bulb and for preventing rays from the bulb to enter the brush chamber while the door is open. Closing of the door automatically returns the shield or occulter to an unobstructing position whereby the ultra violet light rays again pass to the bristles of the brushes in the brush chamber.

The advantages of the invention will become apparent from the drawings and following description.

In the drawings:

FIG. 1 is an elevational front view of toothbrush sanitizer and charger for a cordless electric brush holder embodying our invention.

FIG. 2 is a top plan view thereof.

FIG. 3 is a transverse vertical sectional view, partly in elevation, in the plane of the line 3—3 of FIG. 2.

FIG. 4 is a transverse vertical sectional view, partly in elevation, in the plane of the line 4—4 of FIG. 2, showing toothbrushes and sanitizer mechanism as they appear when the brush chamber door is closed.

FIG. 5 is a view similar to FIG. 4, showing the same parts as they appear when the brush chamber door is open.

In that embodiment of the invention shown in the drawings, a housing **10** comprises a vertical rear wall **11**, two vertical side walls **12**, **13**, top **14**, and bottom **15**, connected together to form a partially open front chamber divided into three areas. The left hand portion houses a cordless electric toothbrush holder **16** in the lower chamber **17**, and charger means (not shown) in the upper chamber which is closed by a front plate **18**. The right hand portion houses a drinking glass **19** in the chamber **20**. Above the chamber **20** is a horizontal wall **21**, slightly concave on its upper surface, provided with an opening **22**. An ultra violet light bulb **23** is mounted in the chamber **24** above the wall **21** in position to emit rays which pass through the opening **22** to the upper portion of the glass **19**. The front of the chamber **24** is closed by a front plate **25**.

A brush chamber **26** for housing a plurality of conventional toothbrushes **27** is located centrally of the housing **10** and separated from the chamber **17** by a fixed wall **28**. The front of the brush chamber is closed by a door

29 hingedly mounted at its bottom edge **30** on the bottom **15** of the housing. The upper end of the door **29** is provided with an inwardly extending catch **31** which engages a push button latch **32** mounted in a recess **33** in the top **14**.

A brush holder **35** adapted for holding toothbrushes **27** is attached to the inner surface of the door **29** as indicated at **36**, and is movable with the door and relatively to the housing. The holder **35** has an upper edge **37** inclined downwardly from front to rear in a plane which exposes the brush bristles above the holder **35** so that they face the chamber **24** and the ultra violet light bulb **23** therein. The brush holder **35** is located sufficiently below the top wall **14** of the housing **10** so that the brushes **27** clear the top wall **14** when the door is swung to open position as shown in FIG. 5.

Mounted adjacent the brush holder **35**, between the brush chamber **26** and light bulb chamber **24**, is an occulter **40**. The occulter is loosely mounted on a spring pivot pin **41** on a bracket **42** fixedly mounted on the rear wall **11**. The occulter **40** normally is in the depending position shown in FIG. 4. When the door **29** is opened, the brush holder **35** and brushes **27** move outwardly with the door, in the position shown in FIG. 5. The holder **35** has projecting from its side a projection which may be a roller **43** which serves to lift the occulter by contact with the edge **44**, raising the occulter into the position of FIG. 5 until the roller **43** engages the hook **45**. When in this position, the door is prevented from further outward movement, and the occulter closes the opening between the brush chamber and the ultra violet light chamber.

The arrangement of the brush chamber, light bulb chamber and drinking glass chamber provides for most efficient use of the ultra violet light rays for sanitizing a plurality of toothbrushes and the drinking glass. The construction of the brush chamber door and means for carrying the brushes **27** thereon provides simple mechanism for making the brushes accessible by opening the door and at the same time automatically actuating the occulter to shield the user from the ultra violet rays.

Changes may be made in details of construction and arrangement of parts without departing from the scope of invention as defined in the appended claims. For example, the construction which embodies the means for sanitizing the toothbrushes may be applied to brushes which are not intended for insertion in the electrical holder shown herein. Likewise, the sanitizing of toothbrushes without means for sanitizing a drinking glass is also comprehended within this invention.

We claim:

1. A toothbrush sanitizer comprising:
   (a) a housing having a chamber for holding a toothbrush and an adjacent chamber communicating with the first chamber for holding a light bulb,
   (b) a door hingedly connected to the housing for closing the front of the brush chamber,
   (c) bracket means on the door and movable therewith for supporting a toothbrush in the brush chamber in position wherein the brush bristles face the light bulb when the door is closed,
   (d) an occulter swingingly mounted in the housing between the brush chamber and light bulb chamber normally disposed in unobstructing position relatively to the bulb, and
   (e) means movable with the door for engaging the occulter and moving it to light ray obstructing position when the door is open.

2. The toothbrush sanitizer defined by claim 1 in which the housing includes a drinking glass chamber located beneath the light bulb chamber separated from each other

by a horizontal wall provided with an opening for passage of light rays to the upper part of the glass.

3. The toothbrush sanitizer defined by claim 1 in which the occulter is a plate pivotally connected near one edge to the housing and provided with a hook at a distance from the pivotal connection, and in which the means for moving the occulter is a projection on the bracket movable with the door for engaging an edge of the plate between the pivotal connection and the hook to thereby move the occulter to light ray obstructing position while the door is being opened, and to engage the hook for limiting the outward movemnt of the door.

4. An electric toothbrush sanitizer and charger comprising:

(a) a housing having an open front chamber for holding a cordless electric toothbrush holder, a charger chamber above the first chamber, a centrally located brush chamber, and an adjacent light bulb chamber communicating with the brush chamber,

(b) a door hingedly connected to the housing for closing the front of the brush chamber,

(c) bracket means connected to the inner side of the door and movable therewith for supporting a plurality of toothbrushes in the brush chamber in position wherein the brush bristles face the light bulb when the door is closed,

(d) an occulter swingingly mounted in the housing between the brush chamber and light bulb chamber normally disposed in unobstructing position relatively to the bulb, and

(e) means movable with the door for engaging the occulter and moving it to light ray obstructing position when the door is open.

5. The electric toothbrush sanitizer defined by claim 4 in which the housing includes a drinking glass chamber located beneath the light bulb chamber separated from each other by a horizontal wall provided with an opening for passage of light rays to the upper part of the glass.

6. The electric toothbrush sanitizer defined by claim 4, in which the occulter is a flat plate pivotally connected to the housing near one of the lower corners of the plate and provided with a hook on the lower opposite corner, and in which the means for moving the occulter is a roller mounted on the bracket for engaging the lower edge of the plate between the pivotal connection and hook to thereby raise the occulter to light ray obstructing position while the door is being opened and to engage the hook for limiting the outward movement of the door.

References Cited by the Examiner

UNITED STATES PATENTS

1,074,514	9/1913	McLennan	312—275 X
2,554,156	5/1951	Rosenthal	21—102
2,579,242	12/1951	Pask	250—51
2,714,444	8/1955	Shippen	206—15.1
3,100,842	8/1963	Tellefsen	250—51
3,184,277	6/1965	Stevens	312—276

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