

[54] **DRINKING GLASS STERILIZER**

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G01N 23/00

[58] Field of Search **21/54 R, 102 R; 250/51,**
250/455

[56] **References Cited**

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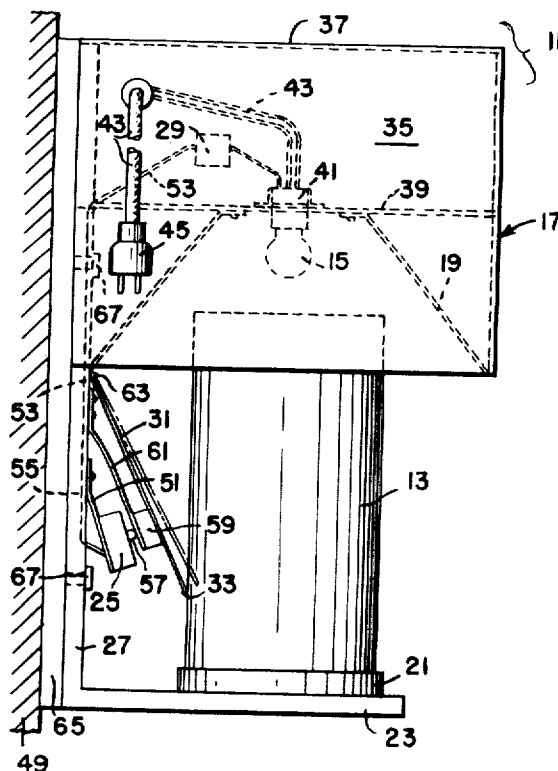
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[57]

ABSTRACT

An ultraviolet sterilizer for a drinking glass, cup, and the like, comprising an ultraviolet bulb mounted in a housing, a reflector positioned around said bulb, a seating or positioning ring mounted on a base plate so as to receive the drinking glass and hold it in position beneath the bulb so that direct ultraviolet rays strike the inside of the glass and indirect ultraviolet rays from the reflector strike the outside of the glass to insure thorough sterilization of the glass, an electrical starter switch mounted on a wall plate beside the glass and connected in electrical circuit with the bulb, and a spring-backed actuating plate hingedly mounted on the wall plate with its bottom edge normally positioned over the seating ring so that the inserting of the drinking glass into said ring pushes the actuating plate to press against and close the starter switch to turn on the bulb. A timer may be provided to turn off the bulb after a pre-set time period.

2 Claims, 4 Drawing Figures



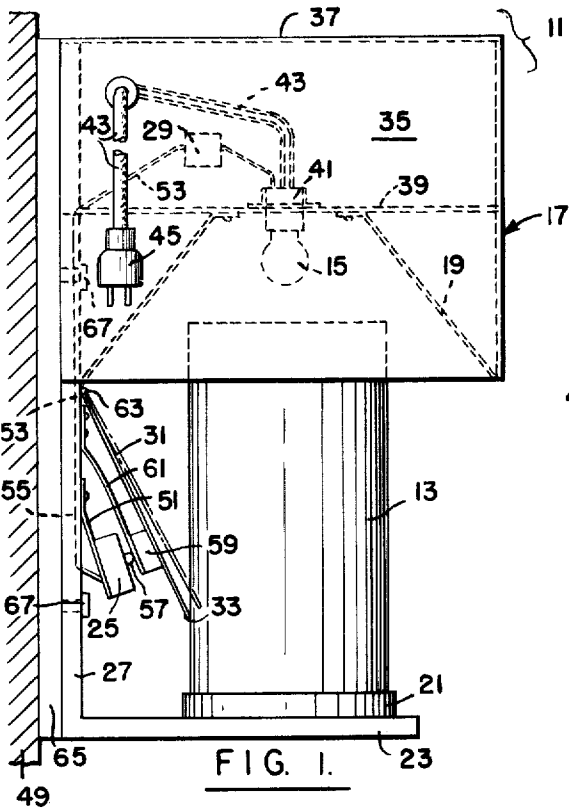


FIG. 1.

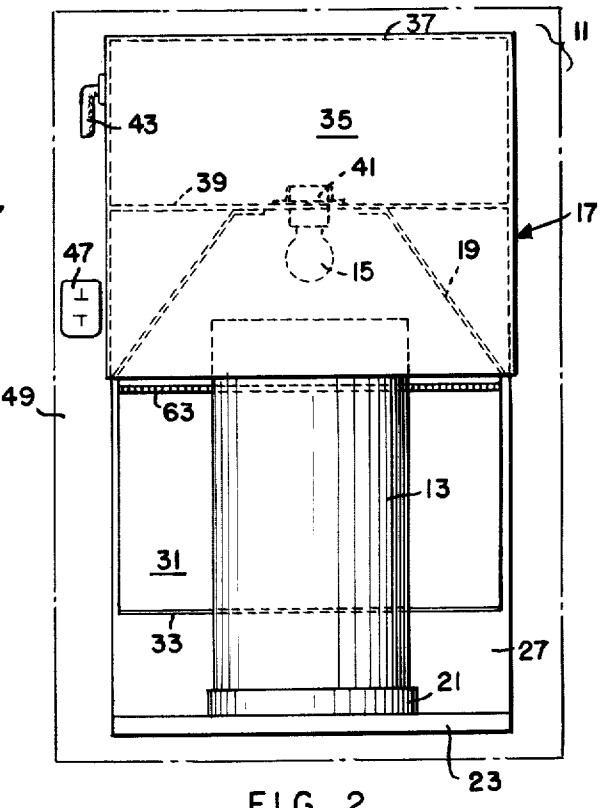


FIG. 2.

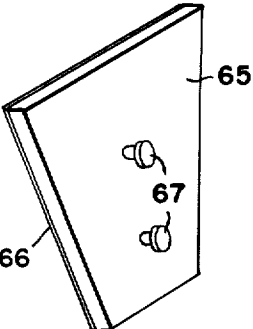


FIG. 3.

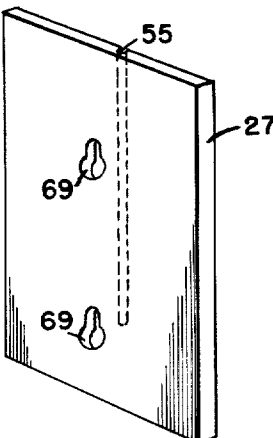


FIG. 4.

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DRINKING GLASS STERILIZER

BACKGROUND OF THE INVENTION

The spreading of colds, virus infections, and other diseases, is very often caused by the use of a common drinking glass or cup in the home. Such common drinking glasses are often used at the kitchen sink faucet, and in the bathroom while brushing teeth. In a family with a number of children, a cold or virus infection brought into the home by one child usually runs through the entire family.

One suggested solution to this problem has been to provide disposable paper cups supported in a dispenser mounted in the bathroom, and in another dispenser mounted next to the kitchen faucet. However, a large family requires about a hundred cups a week for the bathroom alone, and the trash basket associated with the cup dispenser is filled three times a week and has to be emptied. This emptying a waste basket so often is something of a chore, and this number of cups becomes expensive. Also this large number of used disposable cups creates a pollution problem because they add considerably to the trash that must somehow be disposed of.

SUMMARY OF THE INVENTION

Accordingly, it is an object of this invention to provide a reusable, sterilized, bath and kitchen cup or drinking glass so as to avoid communicating colds, virus infections, and other diseases. It is another object to eliminate the use of a dispenser and disposable paper cups, and the trash problem caused thereby.

The objects of the invention are accomplished by providing an ultraviolet sterilizer for a drinking glass, which sterilizer is turned on by the action of inserting the glass into its holder. The sterilizer may also be provided with a timer for automatically turning off the equipment when the drinking glass has been thoroughly sterilized.

BRIEF DESCRIPTION OF THE DRAWINGS

Other objects and advantages of this invention, including its simplicity and economy, will further become apparent hereinafter and in the drawings, in which:

FIG. 1 is a view in side elevation of drinking glass sterilizer constructed in accordance with this invention;

FIG. 2 is a view in front elevation of the drinking glass sterilizer of FIG. 1;

FIG. 3 is a view in perspective of a mounting bracket adapted to support the sterilizer on the wall of a kitchen or bathroom; and

FIG. 4 is a view in perspective showing the rear of the dispenser and its mounting holes.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Turning now to the specific embodiment of the invention selected for illustration in the drawings, there is shown an ultraviolet sterilizer 11 for a drinking glass or cup 13 comprising an ultraviolet bulb 15 mounted in a housing 17, a reflector 19 positioned around bulb 15, a seating or positioning ring 21 mounted on a base plate 23 so as to receive the drinking glass 13 and hold it in position beneath bulb 15 so that direct ultraviolet rays strike the inside of the glass 13 and indirect ultraviolet rays from reflector 19 strike the outside of the glass to insure thorough sterilization of glass 13, an electrical

starter switch 25, such as a microswitch, mounted on a wall plate 27 that connects housing 17 to base plate 23 and connected in electrical circuit with a timer 29 and with bulb 15, and a spring-backed actuating plate 31 hingedly mounted on wall plate 27 with its bottom edge 33 normally positioned over the positioning ring 21 so that the inserting of drinking glass 13 into ring 21 pushes actuating plate 31 to press against and close switch 25 to turn on the bulb 15. After a predetermined period of time, timer 29 opens the electrical circuit to bulb 15 to extinguish the bulb. Timer 29 may be set for any desired time period, but it is preferably set for a period of at least 20 seconds so as to insure that drinking glass 13 is thoroughly sterilized by the ultraviolet rays.

Housing 17 is provided with a compartment 35 formed between upper wall 37 and mounting wall 39, which compartment 35 is used for enclosing timer 29 and some of the electrical wiring connected with timer 29 and ultraviolet bulb socket 41 that is mounted on wall 39. Reflector 19, which may be aluminum, is mounted to the underside of wall 39 and may be frusto-conical in shape. Wires 43 are connected between bulb socket 41 and plug 45 that is adapted to be inserted into an electrical wall socket 47 in house wall 49.

Starter switch 25 is mounted on wall plate 27 by bracket 51 and wires 53 from switch 25 lie in a groove 55 formed in wall plate 27. Switch 25 includes a spring-backed operating button 57 that is pushed by element 59 mounted on the end of a spring 61 having its other end attached to wall plate 27. Spring 61 pushes element 59 against the rear surface of actuating plate 31 to normally position bottom edge 33 over seating ring 21 so that the inserting of the drinking glass 13 into ring 21 pushes the actuating plate 31 about its hinge 63 to move element 59 and the free end of spring 61 toward button 57 of switch 25 to depress button 57 and close the electrical circuit to bulb 15.

A wall bracket 65 is provided having two headed bolts 67 extending therefrom. The back surface of wall bracket 65 is provided with an adhesive layer 66 that may be used to attach it to house wall 49. Wall plate 27 includes a pair of mounting holes 69 for detachably mounting ultraviolet sterilizer 11 on wall bracket 65 by sliding the holes 69 of plate 27 over the headed bolts 67 of wall bracket 65.

In operation, with plug 45 inserted into electrical wall socket 47, and actuating plate 31 in normal position over a portion of positioning ring 21, drinking glass 13 is inserted into position in ring 21. The inserting of drinking glass 13 into ring 21 causes the drinking glass to contact lower edge 33 of actuating plate 31 and move it about hinge 63 toward wall plate 27. Plate 31 pushes against element 59 and against the force of spring 61 to depress spring-backed operating button 57 of switch 25 and thereby close the circuit to bulb 15 and turn on the bulb to emit ultraviolet rays that sterilize drinking glass 13. After about 20 seconds, timer 29 operates to open the circuit to bulb 15 and extinguish the bulb.

Timer 29 may be any conventional timer such as the electronic timer shown and described in *RCA Transistor Manual*, 1967, published by the Radio Corporation of America, pages 523-524, in which case switch 25 is a double-pole double-throw switch, or such as the conventional toaster timer illustrated and described in *The Way Things Work*, Simon and Schuster, New York,

1967, at pages 20-21, 270-273, having a bimetallic strip device with two strips of metal bonded together with different co-efficients of thermal expansion. On being heated the two metals undergo different amounts of expansion, so that the strip curves and its free end deflects to actuate a contact or switch. Both texts are incorporated herein by reference.

Housing 17, wall plate 27, and base plate 23 may be made of a synthetic plastic, as may be drinking glass or cup 13.

When drinking glass or cup 13 is withdrawn from ring 21 for use, spring 61 pushes actuating plate 31 back to its normal position above positioning ring 21, ready to receive the cup for resterilization after use.

It is to be understood that the form of the invention herewith shown and described is to be taken as a presently preferred embodiment. Various changes may be made in the shape, size and arrangement of parts. For example, equivalent elements may be substituted for those illustrated and described herein, parts may be reversed, and certain features of the invention may be utilized independently of the use of other features, all without departing from the spirit or scope of the invention as defined in the subjoined claims.

I claim:

1. An ultraviolet sterilizer for a drinking glass, cup,

or the like comprising an ultraviolet ray source mounted in a housing, a reflector positioned around said ray source, a base plate connected to the housing by a wall plate, ring means including a seating ring mounted in the base plate for holding the drinking glass in position beneath the ray source so that the ultraviolet rays strike the inside and outside of the glass, an electrical switch mounted on the wall plate and connected in circuit with the ultraviolet ray source, an actuating plate hingedly mounted on the wall plate, and a spring mounted on the wall plate and pushing against said actuating plate to normally position the bottom edge of the actuating plate over the seating ring when the glass is not seated in the ring, so that, in setting the drinking glass into the ring, the drinking glass pushes the actuating plate against the force of said spring to actuate said switch to turn on the ultraviolet ray source to sterilize the glass, said ring means maintaining said switch closed by holding the drinking glass in position against said actuating plate and against the force of said spring to maintain the ultraviolet ray source in activated condition.

2. The ultraviolet sterilizer of claim 1 including timing means for turning off the ultraviolet ray source automatically after a pre-set period of time.

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