

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
9 October 2003 (09.10.2003)

PCT

(10) International Publication Number
WO 03/083365 A1

(51) International Patent Classification⁷: **F21V 33/00**

(21) International Application Number: PCT/US03/09558

(22) International Filing Date: 26 March 2003 (26.03.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/367,908 26 March 2002 (26.03.2002) US

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(81) Designated States (*national*): AE, AG, AL, AM, AT, AU,
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,

CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW,
MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE,
SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ,
VC, VN, YU, ZA, ZM, ZW.

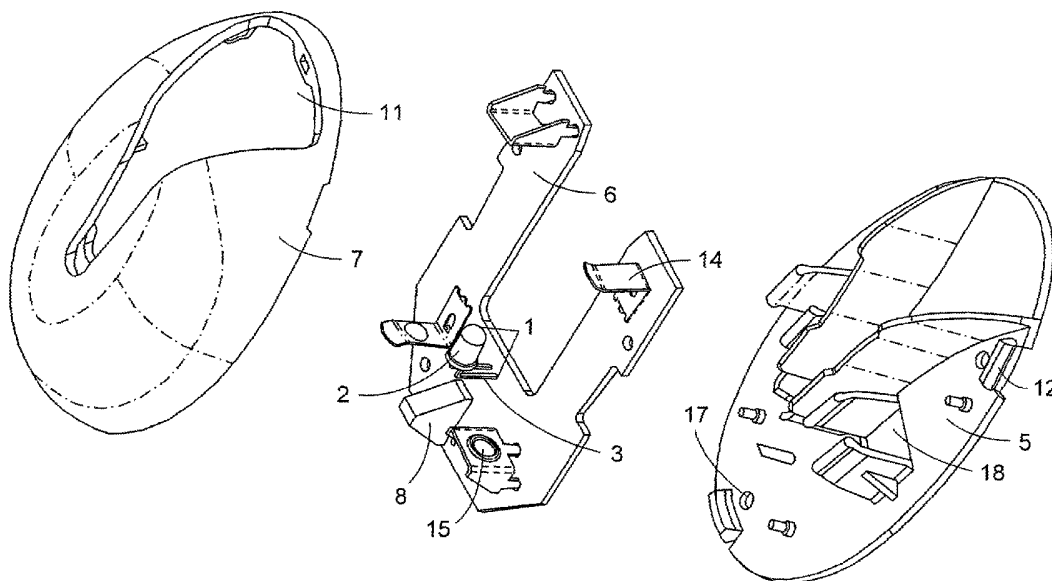
(84) Designated States (*regional*): ARIPO patent (GH, GM,
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),
Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,
ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO,
SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM,
GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the
claims and to be republished in the event of receipt of
amendments

For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

(54) Title: PORTABLE LIGHT AND AIR FRESHENER SYSTEM



(57) Abstract: A portable light and air freshener device is provided which has a power source, a lamp (2), housing means (6) for holding said lamp and power source in the device, a switch (8), and a scented cover (7).



WO 03/083365 A1

PORTABLE LIGHT AND AIR FRESHENER SYSTEM**Introduction**

This Application claims the benefit of U.S. Provisional Application No. 60/367,908 filed March 26, 2002.

5 Background of the Invention

Low-wattage night lights typically do not provide enough light for someone who needs to use the bathroom or locate an object inside a box or container. Several prior art devices exist for illuminating a toilet and the surrounding area. For
10 example, U.S. Pat. No. 4,860,178 teaches a battery-powered light attached to a toilet seat that is activated by lifting the seat into a vertical position or by manual switching. Such a device allows one to determine, at a glance, if the toilet seat is down or up. However, the lamp of such a device is a
15 direct source of light, and the battery is quickly drained if the seat is left in its vertical position inadvertently, or if the switch is accidentally left on, for an extended period of time. U.S. Pat. No. 5,036,433 teaches a device that automatically switches on when a light sensor detects
20 darkness. Moreover, this device also presents a direct source of light to the eyes.

There is a need for a night light with a focused light, that is easy to install, easy to use, and easy to clean, and able to be used to illuminate toilet bowls, hampers, tool
25 boxes, coolers, evenly and indirectly. The present invention

- 2 -

provides a portable light and air freshener system which provides no point sources of direct light to user.

Summary of the Invention

The present invention provides a portable light and air
5 freshener device comprising a power source; a lamp; a housing means for holding said lamp and power source in the device; a switch; means for mounting said housing means to a surface; and a scented cover.

Brief Description of the Drawings

10 Figure 1 shows an exploded view of a preferred embodiment of the present invention.

Detailed Description of the Invention

The present invention is a portable light and air
15 freshener device which may be easily mounted in a variety of locations. The device is suitable for use in a bathroom, diaper pail, clothes hamper, on a toilet seat, on a jewelry box, in an ice cooler, pool box, dock box, trash can, window box seat, wall mirror, closet, brief case or automobile
20 console.

As shown in Figure 1, the portable light and air freshener device comprises a power source; a lamp 1; a housing means for holding said lamp 1 and power source in the device; a switch 8; and means for mounting said housing means to a

- 3 -

surface; and a scented cover 7.

Any suitable power source may be used in the design. Suitable power sources include electric batteries, an electrical plug suitable for use in a wall socket, solar
5 powered panels or any other suitable power source. In a preferred embodiment the power source is a electric battery. The electric battery may be of any size suitable for the particular design application. Some examples of suitable electric batteries are AA cell batteries, AAA cell batteries,
10 wafer batteries, or any other type of suitable battery. The lamp 1 preferably comprises a light emitting diode (LED) bulb 2. The LED bulb 2 may be clear or any color or combination of colors. The lamp 1 has lead wires 3 which are connected to the switch 8 and power source to connect the
15 circuit. In this manner the lamp 1 is lit when an electrical circuit is completed, i.e. when the switch 8 is actuated. In one aspect, a photoelectric sensor switch mechanism can be used in which is mechanism measures ambient light. When enough ambient light is present, the switch is unable to
20 complete a circuit and the power to the lamp is taken away, until the amount of ambient light is decreased thus allowing the circuit to be completed again. In another aspect, a delay mechanism may be employed with a photo cell or a tilt-activated, or manual switch, so that the circuit will stay
25 completed for a predetermined period of time and then disconnect automatically. The delay feature can be present

- 4 -

independent of any power source feature or any other component. The housing means for holding the lamp 1 and power source is comprised of a back panel, an inner member 6 which provides a mounting frame for the power source, lamp 1 and switch 8, and a scented cover 7. The housing means may be shaped in any form desirable, for instance, as an oval, square, lady bug, butterfly, flower, fruit, cloud, or other various shape. The housing means may be constructed so that the scented cover 7 does not separate from the back panel.

Such a non-opening cover would be desired on a disposable portable night light and air freshener device. Alternately, the housing means may be constructed so that the cover is easily separated from the back panel, allowing for replacement of the batteries. The switch 8 may be of any suited type depending upon the desired application. For example, in one preferred embodiment, a motion sensor switch 8 would automatically turn on the lamp 1 when an object moved across the path of the motion sensor. Such a motion sensor switch 8 in a portable light and air freshener device would be ideal for use on a stationary surface such as a wall or pole. In another preferred embodiment, a tilt-activated switch 8 would automatically turn on the lamp 1 when the surface on which the portable light and air freshener device was mounted moved pivotally about an axis. Such a tilt-activated switch 8 would be ideal for portable light and air freshener device

- 5 -

applications on toilet seats, hamper lids, dock boxes, or numerous other applications. However, any type of automatic or manual switch 8 could be used depending upon the desired application. The portable light and air freshener device of 5 the present invention may be mounted to a surface via any suitable securing means. Suitable securing means include Velcro™ tape, double-sided adhesive, glue, screws, clips, lugs, or any other applicable securing means. The cover comprises a lens 10. The lens 10 may be a separate or 10 removable part of the cover, or the lens 10 may be an integral lens 10. An integral lens will be a part of the cover, and non-removable. The lens 10 will have light pipe features that help to direct light in a desired direction. Light pipe features allow light to enter the lens at a focus point, the 15 light is then directed so that it travels across a desired path through the lens, the light then exits the lens at a designated exit point. Light pipe features can be designed through ridges in the lens, ribs in the lens, fibers, or other channels. The lens 10 will direct light out of the user's 20 eyes in an application such as a mounted toilet night light and air freshener device. The lens 10 can also be designed to pipe light onto a work surface such as for use on a lid, hamper, or dock box. The lens 10 may be translucent or opaque. A translucent lens 10 may comprise multiple colors 25 and/or designs. The lens 10 can be replaceable or

- 6 -

interchangeable. Light is directed through the lens 10 to project a variety of shapes on a ceiling or other surface. The light can further be directed to add to the theme of a portable night light and air freshener device, for instance
5 a lady bug shaped device can emit light through the lens 10 in the shape of bees or flowers. A butterfly shaped device can comprise light pipe antenna and shine a shape such as a flower onto the ceiling or other surface. The scented cover 7 is comprised of a scented plastic. The scented plastic may
10 be any color or color combination. Similarly, the scented plastic may comprise any scent or fragrance. The scented cover 7 can comprise a fragrance that is related to the overall theme of a portable night light and air freshener, for instance a rose shaped device shining bees on the ceiling can
15 comprise a rose scented cover 7. A fruit shaped designed device can have a fruit scented cover 7. The scented cover 7 is replaceable with a new cover when the fragrance is diminished or when a different color or fragrance is desired. The scented cover 7 encloses the inner member 6
20 and is securely attachable to the back panel 5 via clips 12 or other suitable means to attach the cover to the and protects the inner member 6 from damage via, physical contact, water or liquids or other damaging factors. In a preferred embodiment the inner member 6 is comprised of a
25 printed circuit board (PCB) with negative battery contacts

- 7 -

14 and positive battery contacts 15 to hold either end of disposable or recyclable batteries. The inner member 6 may further comprise a resistor which will serve to extend the life of the battery and provide regulated light. It is
5 estimated that the LED bulb will last for up to 10,000 hours of use before needing to be replaced. In a further preferred embodiment the resistor is approximately 1/4 ohm. In a yet further preferred embodiment, the inner member 6 is designed to interlock into the back panel 5 so that
10 battery retaining clips 18 secure the sides of the battery in place to maintain contact with between the battery ends and the respective terminals. The back panel 5 comprises light guide walls which function to focus or direct the light. In a preferred embodiment the light guide walls
15 prevent the light from leaching or escaping into the adjacent body of the portable light and air freshener device. The guide walls also support the cover and help to retain the cover in its desired position in relation to the inner member 6 and back panel. The back panel 5 may
20 further comprise optional mounting means, such as screw set holes 17, or adhesive, In a preferred embodiment, clips 12 located on the back panel 5 lock the scented cover 7 into the correct position.

- 8 -

What is Claimed:

1. A portable light and air freshener device comprising a power source; a lamp; housing means for holding said lamp and power source in the device; a switch; means for
5 mounting said housing means to a surface; and a scented cover.
2. The device of claim 1 wherein the switch is a tilt-activated switch.
3. The device of claim 1 wherein the switch is a motion
10 sensing switch.
4. The device of claim 1 wherein the power source is a battery.
5. The device of claim 1 wherein the power source is a solar powered cell.
- 15 6. The device of claim 1 wherein the power source is a electrical plug suitable for use in a wall socket.

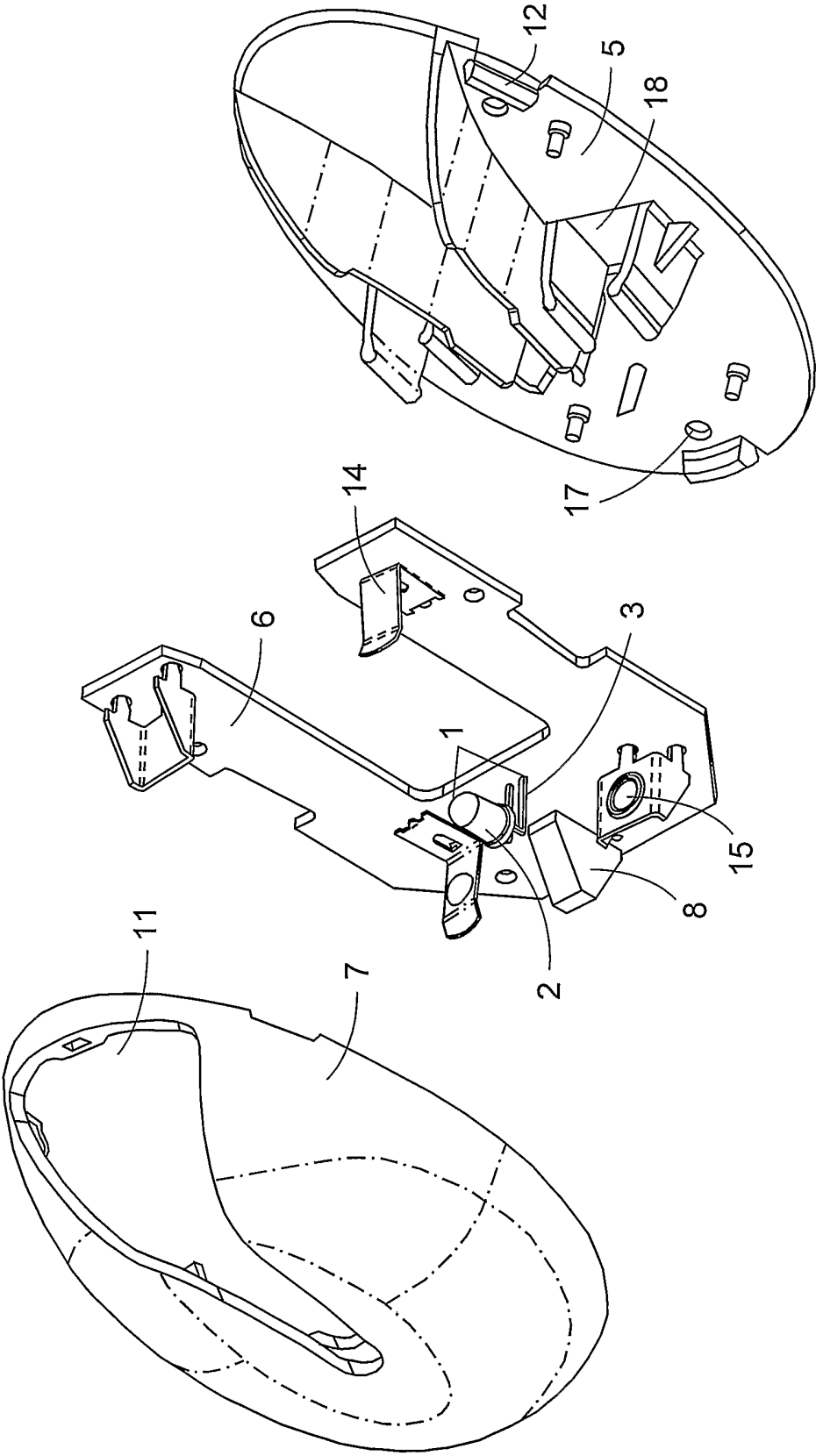


FIG. 1

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/09558

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : F21V 33/00
US CL : 362/95,96,101,154, 276, 394,802

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
U.S. : 362/95,96,101,154, 276, 394,802,84,154,253

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X ---	US 5,624,025 A (Hixon) 29 April 1997 (29.04.1997), see entire reference	1, 4, & 6
Y		2, 3, & 5
X ---	US 5,718,498 A (Pullman) 17 February 1998 (17.02.1998), see entire reference	1, & 4
Y		2, 3, 5, & 6
X ---	US 4,837,559 A (Green, Sr.) 06 June 1989 (06.06.1989), see entire reference	1, & 4
Y		2, & 3



Further documents are listed in the continuation of Box C.



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Date of the actual completion of the international search

20 May 2003 (20.05.2003)

Date of mailing of the international search report

26 AUG 2003

Name and mailing address of the ISA/US

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C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X ---, P Y	US 6,398,381 B1 (Tseng) 04 June 2002 (04.06.2002), see entire reference	1, 3, & 4 ----- 2, 5, & 6
Y	US 5,136,476 A (Horn) 04 August 1992 (04.08.1992), see entire reference	2, & 3
Y	US 5,437,066 A (Mills et al.) 01 August 1995 (01.08.1995), see entire reference	2, 3, & 4
Y	US 5,036,443 A (Humble et al.) 30 July 1991 (30.07.1991), see entire reference	2, 4, & 5