ORNAMENTAL TOUCH-CONTROLLED ELECTRONIC CANDLE

Inventor: Kuo-Fang Chen, Hsin Tien city (CN)

Correspondence Address:
ROSENBERG, KLEIN & LEE
3458 ELICOTT CENTER DRIVE-SUITE 101
ELICOTT CITY, MD 21043

Appl. No.: 11/656,457
Filed: Jan. 23, 2007

Foreign Application Priority Data
Dec. 21, 2006 (TW) .......................... 095222533

Publication Classification
Int. Cl. F23Q 2/32 (2006.01)
U.S. Cl. ........................................ 362/392; 431/125

ABSTRACT
An touch-controlled ornamental electronic candle including: an ornamental candle main body having a top face and a bottom face; an ornamental flame body erected on the top face of the candle main body, whereby light beam can go through the flame body; light emitters hidden in the flame body to emit light outward through the flame body; and a lighting control circuit arranged in the candle main body for controllably extinguishing or lighting up the light emitters. The lighting control circuit includes a hand touch pad arranged in the candle main body or arranged on a surface of the candle main body and exposed to outer side. A user’s body can get close to or touch the hand touch pad to control the operation thereof so as to controllably extinguish or light up the light emitters.
Fig. 6
ORNAMENTAL TOUCH-CONTROLLED ELECTRONIC CANDLE

BACKGROUND OF THE INVENTION

1. Field of the Invention
The present invention is related to an ornamental touch-controlled electronic candle, and more particularly to an ornamental touch-controlled electronic candle including a hand touch pad. A user's body can get close to or touch the hand touch pad to control the operation thereof so as to controllably extinguish or light up the light emitters.

2. Description of the Prior Art
A conventional candle can burn in flames. In use of the conventional candle, a user must be very careful. In case of incandescence, a fire may take place to cause loss of human lives and properties.

In order to avoid such problem, many kinds of ornamental electronic candles have been developed. For example, U.S. Pat. No. 6,616,308 discloses an imitation candle having a transparent main body 18. A light source 24 is hidden in the main body 18. When the light source 24 is lighted up, the light beam can go through the main body 18 to outer side. Such imitation candle has no flame and is quite different from the real candle with flame.

Also, the flame of a real candle is extinguishable by blowing. However, the imitation candle can be only switched off. Therefore, the imitation candle still can hardly lively imitate the real candle.

Some existing electronic candles have ornamental flames erected on the top faces of the main bodies. The light emitters are hidden in the ornamental flames to emit light outward through the ornamental flames to simulate real flames. However, such electronic candles are still turned on/off by switching. In use, a user needs to tilt the electronic candle with one hand and switch the switch with the other hand. This is quite inconvenient to the user.

SUMMARY OF THE INVENTION

It is therefore a primary object of the present invention to provide an ornamental touch-controlled electronic candle which has a live simulative flame body as a real flame. In addition, by means of touching a hand touch pad of the electronic candle, for example, with a hand, the light emitters of the electronic candle can be extinguished or lighted up. Therefore, it is more convenient for a user to use the electronic candle.

According to the above object, the ornamental touch-controlled electronic candle of the present invention includes:

- an ornamental candle main body having a top face and a bottom face;
- an ornamental flame body erected on the top face of the candle main body, whereby light beam can go through the flame body;
- light emitters hidden in the flame body to emit light outward through the flame body; and
- a lighting control circuit arranged in the candle main body for controllably extinguishing or lighting up the light emitters, the lighting control circuit including a hand touch pad arranged in the candle main body, whereby a user's body such as a user's hand can get close to or touch the hand touch pad to control the operation thereof for controllably extinguishing or lighting up the light emitters.

In the above ornamental touch-controlled electronic candle, the hand touch pad is arranged in the candle main body or on a surface of the candle main body and exposed to outer side.

Still according to the above object, the ornamental touch-controlled electronic candle of the present invention includes:

- an ornamental candle main body having a top face and a bottom face, the top face of the candle main body being formed with a cylindrical depression, the cylindrical depression having a recessed face lower than the top face;
- an ornamental flame body erected on the recessed face of the cylindrical depression of the candle main body, whereby light beam can go through the flame body;
- light emitters hidden in the flame body to emit light outward through the flame body; and
- a lighting control circuit arranged in the candle main body for controllably extinguishing or lighting up the light emitters, the lighting control circuit including a hand touch pad arranged in the candle main body, whereby a user's body such as a user's hand can get close to or touch the hand touch pad to control the operation thereof for controllably extinguishing or lighting up the light emitters.

In the above ornamental touch-controlled electronic candle, the hand touch pad is arranged in the candle main body or on a surface of the candle main body and exposed to outer side.

Still according to the above object, the ornamental electronic candle of the present invention includes:

- an ornamental candle main body having a top face and a bottom face, the top face of the candle main body being formed with a truncated conic depression, the truncated conic depression having a recessed face lower than the top face;
- an ornamental flame body erected on the recessed face of the truncated conic depression of the candle main body, whereby light beam can go through the flame body;
- light emitters hidden in the flame body to emit light outward through the flame body; and
- a lighting control circuit arranged in the candle main body for controllably extinguishing or lighting up the light emitters, the lighting control circuit including a hand touch pad arranged in the candle main body, whereby a user's body such as a user's hand can get close to or touch the hand touch pad to control the operation thereof for controllably extinguishing or lighting up the light emitters.

In the above ornamental touch-controlled electronic candle, the hand touch pad is arranged in the candle main body or on a surface of the candle main body and exposed to outer side.

The present invention can be best understood through the following description and accompanying drawings wherein:

BRIEF DESCRIPTION OF THE DRAWINGS

- FIG. 1 is a perspective view of a first embodiment of the present invention;
- FIG. 2 is a sectional view taken along line 2-2 of FIG. 1;
- FIG. 3 is a perspective view of a second embodiment of the present invention;
- FIG. 4 is a sectional view taken along line 4-4 of FIG. 3;
- FIG. 5 is a perspective view of a third embodiment of the present invention;
FIG. 6 is a sectional view taken along line 6-6 of FIG. 5;
FIG. 7 is a circuit diagram of the lighting control circuit of the present invention; and
FIG. 8 is a perspective view of a fourth embodiment of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Please refer to FIGS. 1 to 8. The ornamental touch-controlled electronic candle 20 of the present invention includes an ornamental candle main body 21, an ornamental flame body 31, light emitters D1, D2 (light-emitting diodes in this embodiment) and a lighting control circuit 51. The candle main body 21 has a top face 22, a bottom face 23 and a hand touch pad HTP arranged in the candle main body 21. The ornamental flame body 31 is erected on the top face 22 of the candle main body 21. The light emitters D1, D2 are hidden in the flame body 31 to emit light outward through the flame body 31. The lighting control circuit 51 is arranged in the candle main body 21 for controllably turning on/off the light emitters D1, D2. The lighting control circuit 51 includes a hand touch pad HTP arranged in the candle main body 21 near a surface thereof. Alternatively, as shown in FIG. 8, the hand touch pad HTP is directly arranged on the surface of the candle main body 21 and exposed to outer side. A user’s body, for example, a user’s hand can get close to the hand touch pad HTP to control the operation thereof so as to controllably extinguish or light up the light emitters D1, D2 via transistors Q1, Q2.

Please refer to FIGS. 3 and 4. Alternatively, the top face 22 of the candle main body 21 of the electronic candle 20 can be formed with a cylindrical depression 25. The cylindrical depression 25 has a recessed face 26 lower than the top face 22. The ornamental flame body 31 is erected on the recessed face 26 of the cylindrical depression 25 of the candle main body 21. The light can go through the flame body 31.

Please refer to FIGS. 5 and 6. Alternatively, the top face 22 of the candle main body 21 of the electronic candle 20 can be formed with a truncated conic depression 25. The truncated conic depression 25 has a recessed face 26 lower than the top face 22. The ornamental flame body 31 is erected on the recessed face 26 of the truncated conic depression 25 of the candle main body 21. The light can go through the flame body 31.

Please refer to FIGS. 2, 4, 6 and 7. The lighting control circuit 51 is powered by the power supply BT as shown in FIGS. 2, 4, 6 and 7. The lighting control circuit 51 includes a hand touch pad HTP and a logic unit 52 for controlling the light emitters D1, D2. The power supply BT can be a battery or the civil power to supply necessary power for the lighting control circuit 51. When a user’s hand gets close to or touches the hand touch pad HTP, the hand touch pad HTP generates a current to drive the transistors Q1, Q2 so as to activate the logic unit 52 through the pin P5 thereof. The logic unit 52 sends out current to energize the light emitters D1, D2 respectively through the pins P7 and P8. Accordingly, the light emitters D1, D2 are alternately turned on/off to achieve a live flickering effect as a flame.

According to the above arrangement, when a user’s body such as a user’s hand gets close to or touches the hand touch pad HTP, the light emitters D1, D2 are extinguished or lighted up. Therefore, it is more convenient for a user to use the electronic candle.

The above embodiments are only used to illustrate the present invention, not intended to limit the scope thereof. Many modifications of the above embodiments can be made without departing from the spirit of the present invention.

What is claimed is:

1. An ornamental touch-controlled electronic candle comprising:
   (a) an ornamental candle main body having a top face and a bottom face;
   (b) an ornamental flame body erected on the top face of the candle main body, whereby light beam can go through the flame body;
   (c) light emitters hidden in the flame body to emit light outward through the flame body; and
   (d) a lighting control circuit arranged in the candle main body for controllably extinguishing or lighting up the light emitters, the lighting control circuit including a hand touch pad arranged in the candle main body, whereby a user’s body can get close to or touch the hand touch pad to control the operation thereof for controllably extinguishing or lighting up the light emitters.

2. The ornamental touch-controlled electronic candle as claimed in claim 1, wherein the hand touch pad is arranged in the candle main body.

3. The ornamental touch-controlled electronic candle as claimed in claim 1, wherein the hand touch pad is arranged on a surface of the candle main body and exposed to outer side.

4. An ornamental touch-controlled electronic candle comprising:
   (a) an ornamental candle main body having a top face and a bottom face, the top face of the candle main body being formed with a cylindrical depression, the cylindrical depression having a recessed face lower than the top face;
   (b) an ornamental flame body erected on the recessed face of the cylindrical depression of the candle main body, whereby light beam can go through the flame body;
   (c) light emitters hidden in the flame body to emit light outward through the flame body; and
   (d) a lighting control circuit arranged in the candle main body for controllably extinguishing or lighting up the light emitters, the lighting control circuit including a hand touch pad arranged in the candle main body, whereby a user’s body can get close to or touch the hand touch pad to control the operation thereof for controllably extinguishing or lighting up the light emitters.

5. The ornamental touch-controlled electronic candle as claimed in claim 4, wherein the hand touch pad is arranged in the candle main body.

6. The ornamental touch-controlled electronic candle as claimed in claim 4, wherein the hand touch pad is arranged on a surface of the candle main body and exposed to outer side.

7. An ornamental touch-controlled electronic candle comprising:
   (a) an ornamental candle main body having a top face and a bottom face, the top face of the candle main body being formed with a truncated conic depression, the truncated conic depression having a recessed face lower than the top face;
   (b) an ornamental flame body erected on the recessed face of the truncated conic depression of the candle main body.
body, whereby light beam can go through the flame
body;
(c) light emitters hidden in the flame body to emit light
outward through the flame body; and
(d) a lighting control circuit arranged in the candle main
body for controllably extinguishing or lighting up the
light emitters, the lighting control circuit including a
hand touch pad arranged in the candle main body,
whereby a user’s body can get close to or touch the hand
touch pad to control the operation thereof for controlla-
bly extinguishing or lighting up the light emitters.
8. The ornamental touch-controlled electronic candle as
claimed in claim 7, wherein the hand touch pad is arranged in
the candle main body.
9. The ornamental touch-controlled electronic candle as
claimed in claim 7, wherein the hand touch pad is arranged on
a surface of the candle main body and exposed to outer side.
* * * * *