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**(54) FLAT CANDLE LAMP**

(57) The invention discloses a flat candle lamp, including a lamp base. The lamp base is provided with an internal battery box or an external DC power supply device. The lamp base is provided with a lamp holder. The lamp holder has a height structure, and at least one row of lamp beads electrically connected to the battery box are mounted on the lamp holder along a vertical direction. A charging interface electrically connected to the battery box is mounted on the lamp base. The lamp beads are arranged vertically in one row, two rows, or more than two rows. When the lamp beads are arranged vertically in one row, the lamp holder is of a vertical plate structure,

several rectangular open slots for mounting the lamp beads are provided on one side of the plate-structure lamp holder, and a lamp bead is disposed in each of the rectangular open slots. A power switch for controlling power-on and power-off of the lamp beads is mounted on the lamp base, and the lamp beads in the same row are connected in parallel. The invention has the following beneficial effects: it is practical, has a low production cost, has a novel structure, can be used for decoration or lighting in household, exhibition and other industries conveniently, and is easy to use and operate.

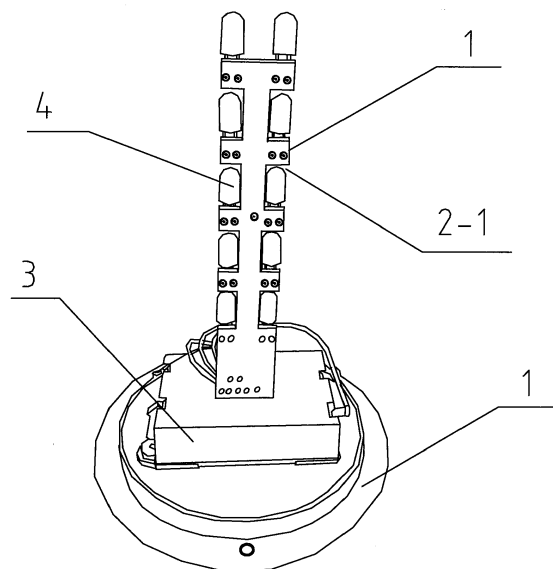


FIG. 1

**Description****Technical Field**

**[0001]** The invention relates to a lamp for lighting and decoration, and in particular, to a flat candle lamp.

**Background Art**

**[0002]** At present, there is no lamp for lighting and decoration having a similar structure on the market.

**Summary of the invention**

**[0003]** A technical problem to be solved in the invention is to provide a flat candle lamp to solve the shortcomings and defects of the prior art.

**[0004]** In order to achieve the foregoing objective, the invention takes the following measures:

A flat candle lamp includes a lamp base, where the lamp base is provided with an internal battery box or an external DC power supply device, the lamp base is provided with a lamp holder, the lamp holder has a height structure, and at least one row of lamp beads electrically connected to the battery box are mounted on the lamp holder along a vertical direction.

**[0005]** A charging interface electrically connected to the battery box is mounted on the lamp base.

**[0006]** The lamp beads are arranged vertically in one row, two rows, or more than two rows.

**[0007]** When the lamp beads are arranged vertically in one row, the lamp holder is of a vertical plate structure, several rectangular open slots for mounting the lamp beads are provided on one side of the plate-structure lamp holder, and a lamp bead is disposed in each of the rectangular open slots.

**[0008]** When the lamp beads are arranged vertically in two rows, the lamp holder is of a vertical plate structure, several rectangular open slots for mounting the lamp beads are provided on two sides of the plate-structure lamp holder, the rectangular open slots on the two sides are disposed opposite to each other to form several I-shaped structures, and a lamp bead is disposed in each of the rectangular open slots.

**[0009]** An upper portion of the lamp base is sleeved with a lamp cover for covering the lamp holder.

**[0010]** When the lamp beads are arranged vertically in multiple rows, circuits between the rows are connected in parallel, and the multiple rows of the lamp beads are arranged vertically and evenly.

**[0011]** A power switch for controlling power-on and power-off of the lamp beads is mounted on the lamp base, and the lamp beads in the same row are connected in parallel.

**[0012]** The external DC power supply device is a USB power socket.

**[0013]** The invention has the following beneficial effects: it is practical, has a low production cost, has a novel

structure, can be used for decoration or lighting in household, exhibition and other industries conveniently, and is easy to use and operate.

**Brief Description of the Drawings**

**[0014]** FIG. 1 is a schematic structural diagram of the invention.

**Detailed Description**

**[0015]** A flat candle lamp includes a lamp base 1. The lamp base 1 is provided with an internal battery box 3 or an external DC power supply device. The lamp base 1 is provided with a lamp holder 2. The lamp holder 2 has a height structure, and at least one row of lamp beads 4 electrically connected to the battery box 3 are disposed on the lamp holder 2 along a vertical direction. The direct current of the battery is used, which is safe.

**[0016]** A charging interface electrically connected to the battery box 3 is mounted on the lamp base 1. The battery box 3 can be recharged and reused.

**[0017]** The lamp beads 4 are arranged vertically in one row, two rows, or more than two rows.

**[0018]** When the lamp beads 4 are arranged vertically in one row, the lamp holder 2 is of a vertical plate structure, several rectangular open slots 2-1 for mounting the lamp beads 4 are provided on one side of the plate-structure lamp holder 2, and a lamp bead 4 is disposed in each of the rectangular open slots 2-1.

**[0019]** When the lamp beads 4 are arranged vertically in two rows, the lamp holder 2 is of a vertical plate structure, several rectangular open slots 2-1 for mounting the lamp beads 4 are provided on two sides of the plate-structure lamp holder 2, the rectangular open slots 2-1 on the two sides are disposed opposite to each other to form several I-shaped structures, and a lamp bead 4 is disposed in each of the rectangular open slots 2-1.

**[0020]** An upper portion of the lamp base 1 is sleeved with a lamp cover for covering the lamp holder 2.

**[0021]** When the lamp beads 4 are arranged vertically in multiple rows, circuits between the rows are connected in parallel, and the multiple rows of the lamp beads 4 are arranged vertically and evenly.

**[0022]** A power switch for controlling power-on and power-off of the lamp beads 4 is mounted on the lamp base 1, and the lamp beads 4 in the same row are connected in parallel. By using the parallel connection, the lamp beads 4 will not affect each other. When one is damaged, other beads still operate normally.

**[0023]** As shown in FIG. 1, two rows of lamp beads 4 are designed.

**[0024]** The lamp cover can be made in different external shapes according to usage scenarios, and the product has good plasticity.

**[0025]** When the lamp beads 4 are arranged vertically in multiple rows (such as three rows, four rows or even more), circuits between the rows are connected in parallel.

allel, and the multiple rows of the lamp beads 4 are arranged vertically and evenly. The rows will not affect each other. When one row of lamp beads 4 are damaged, the other rows of lamp beads 4 can continue to operate.

**[0026]** The external DC power supply device is a USB power socket, and can also be another external power supply device connected to a power adapter.

**[0027]** The invention is mainly used for decoration and lighting, and can be used in the household field, art exhibition and other fields.

## Claims

1. A flat candle lamp, comprising a lamp base (1), wherein the lamp base (1) is provided with an internal battery box (3) or an external DC power supply device, the lamp base (1) is provided with a lamp holder (2), the lamp holder (2) has a height structure, and at least one row of lamp beads (4) electrically connected to the battery box (3) are mounted on the lamp holder (2) along a vertical direction. 15
2. The flat candle lamp according to claim 1, wherein a charging interface electrically connected to the battery box (3) is mounted on the lamp base (1). 20
3. The flat candle lamp according to claim 1 or 2, wherein the lamp beads (4) are arranged vertically in one row, two rows, or more than two rows. 25
4. The flat candle lamp according to claim 3, wherein when the lamp beads (4) are arranged vertically in one row, the lamp holder (2) is of a vertical plate structure, several rectangular open slots (2-1) for mounting the lamp beads (4) are provided on one side of the plate-structure lamp holder (2), and a lamp bead (4) is disposed in each of the rectangular open slots (2-1). 30
5. The flat candle lamp according to claim 3, wherein when the lamp beads (4) are arranged vertically in two rows, the lamp holder (2) is of a vertical plate structure, several rectangular open slots (2-1) for mounting the lamp beads (4) are provided on two sides of the plate-structure lamp holder (2), the rectangular open slots (2-1) on the two sides are disposed opposite to each other to form several I-shaped structures, and a lamp bead (4) is disposed in each of the rectangular open slots (2-1). 35
6. The flat candle lamp according to claim 4, wherein an upper portion of the lamp base (1) is sleeved with a lamp cover for covering the lamp holder (2). 40
7. The flat candle lamp according to claim 1, wherein when the lamp beads (4) are arranged vertically in multiple rows, circuits between the rows are connect- 45

ed in parallel, and the multiple rows of the lamp beads (4) are arranged vertically and evenly.

8. The flat candle lamp according to claim 1, wherein a power switch for controlling power-on and power-off of the lamp beads (4) is mounted on the lamp base (1), and the lamp beads (4) in the same row are connected in parallel. 5
9. The flat candle lamp according to claim 1, wherein the external DC power supply device is a USB power socket. 10

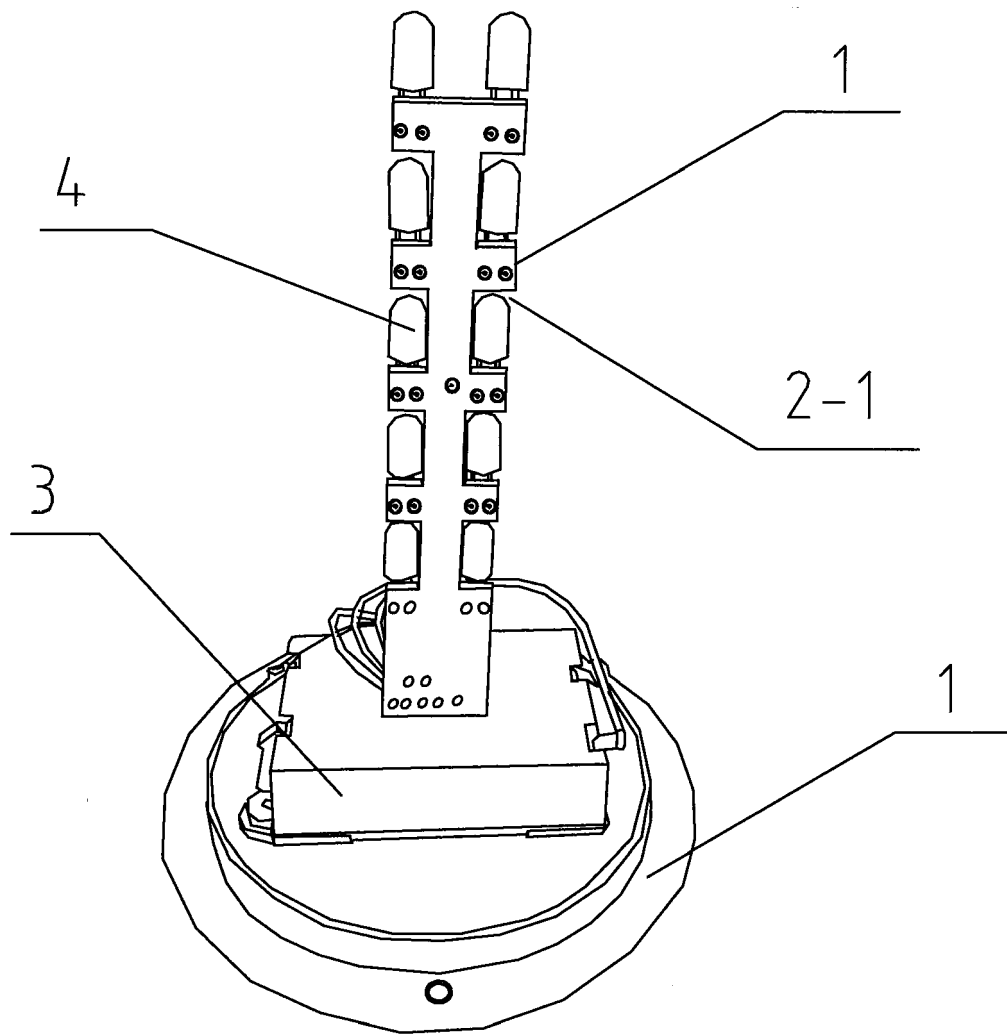


FIG. 1



## EUROPEAN SEARCH REPORT

 Application Number  
 EP 18 19 0342

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	GB 2 548 751 A (SMART GARDEN PRODUCTS LTD [GB]) 27 September 2017 (2017-09-27) * page 3 - page 5; figure 1 *	1-9	INV. F21S6/00 F21S9/02
X	US 2015/369432 A1 (LI XIAOFENG [CN]) 24 December 2015 (2015-12-24) * paragraphs [0071], [0072], [0089]; figures 1,2 *	1-4,7,8	
X	GB 2 527 626 A (LI XIAOFENG [CN]) 30 December 2015 (2015-12-30) * claims 1,8; figures 1,2 *	1-3	
			TECHNICAL FIELDS SEARCHED (IPC)
			F21S F21Y
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 24 October 2018	Examiner Krikorian, Olivier
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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 EPO FORM 1503 03.02 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.**

EP 18 19 0342

5 This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.  
The members are as contained in the European Patent Office EDP file on  
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24-10-2018

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
GB 2548751 A	27-09-2017	CN 108150955 A	12-06-2018
		GB 2548751 A	27-09-2017
US 2015369432 A1	24-12-2015	US 2015369432 A1	24-12-2015
		US 2016290580 A1	06-10-2016
GB 2527626 A	30-12-2015	CN 104266136 A	07-01-2015
		CN 104279497 A	14-01-2015
		CN 104279498 A	14-01-2015
		CN 204100118 U	14-01-2015
		CN 204268354 U	15-04-2015
		DE 102014117070 A1	24-12-2015
		DE 202014105614 U1	04-02-2015
		DK 201500083 A1	11-01-2016
		FR 3022609 A1	25-12-2015
		GB 2527626 A	30-12-2015
		HK 1202148 A1	18-09-2015
		JP 5960790 B2	02-08-2016
		JP 2016009681 A	18-01-2016
		NL 2014352 A	30-03-2016
		TW 201600791 A	01-01-2016
		WO 2015196617 A1	30-12-2015