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(54) **HIGH-EFFICIENCY MOUNTING STRUCTURE FOR LED CEILING LAMP**

(57) The present invention provides a high-efficiency mounting structure for an LED ceiling lamp, including a ceiling and a conventional ceiling lamp assembly. An outer surface of a lower end of the ceiling is disposed with an aperture; the conventional ceiling lamp assembly includes a conventional ceiling lamp body, a lamp holder, mounting clips, first mounting holes, fasteners and second mounting holes; and the lamp holder is fixedly mounted on an outer wall of a lower part of the conventional ceiling lamp body, and the mounting clips, the first mounting holes, the fasteners and the second mounting holes are all arranged in two groups. Two groups of the second mounting holes are disposed on outer surfaces of two sides of the lamp holder, and the first mounting hole is disposed at a middle part of a lower end of an outer surface of one side of the mounting clip.

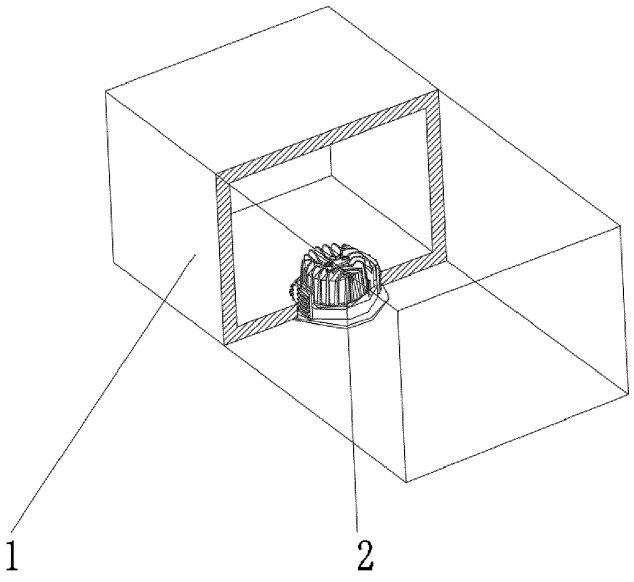

FIG. 1

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Description

TECHNICAL FIELD

[0001] The present invention relates to the technical field of LED ceiling lamp mounting, and in particular to a high-efficiency mounting structure for an LED ceiling lamp.

BACKGROUND

[0002] A conventional LED ceiling lamp is mounted on a ceiling by means of a spring or a spring plate. During the assembly, a worker needs to break the spring and the spring plate and then put the lamp into the ceiling. When a user wants to remove the lamp, special attention is required to be paid to the positions of the spring and the spring plate; otherwise, fingers may be damaged by the spring and the spring plate in the process of removing the lamp. In addition, the ceiling of gypsum type may be scratched and scraped in the process of removing the lamp. The spring or the spring plate forcibly clamps the lamp on the ceiling by means of its own torsional force, this torsional force will not change in the process of removing or mounting the lamp, so when the lamp is removed, the spring will quickly spring down under the action of torsional force, which may damage the user's hands or fingers. Moreover, since the spring plate or spring is made of steel and belongs to a hard object, it is easy to scratch the ceiling of gypsum type.

[0003] Therefore, a high-efficiency mounting structure for an LED ceiling lamp is provided.

SUMMARY

(I) Technical problem to be solved

[0004] In view of the shortcomings of the prior art, the present invention provides a high-efficiency mounting structure for an LED ceiling lamp, the lamp can be directly aligned at an aperture in a ceiling and pressed in, and the lamp can be removed only by gently pressing on the back of the lamp surface, having the advantages of convenient assembly and disassembly and high safety, which can effectively solve the problems in the background.

(II) Technical solution

[0005] In order to achieve the above object, the present invention employs the following technical solutions. A high-efficiency mounting structure for an LED ceiling lamp includes a ceiling and a conventional ceiling lamp assembly. An outer surface of a lower end of the ceiling is disposed with an aperture; the conventional ceiling lamp assembly includes a conventional ceiling lamp body, a lamp holder, mounting clips, first mounting holes, fasteners and second mounting holes; and the lamp holder is fixedly mounted on an outer wall of a lower part of the conventional ceiling lamp body, and the mounting clips, the first mounting holes, the fasteners and the second mounting holes are all arranged in two groups.

[0006] Preferably, two groups of the second mounting holes are disposed on outer surfaces of two sides of the lamp holder, and the first mounting hole is disposed at a middle part of a lower end of an outer surface of one side of the mounting clip.

[0007] Preferably, the fastener is a fixing screw, and the fastener is threadedly connected to the first mounting hole and the second mounting hole.

[0008] Preferably, two groups of the mounting clips are mounted on left and right sides of the conventional ceiling lamp body via two groups of the fasteners.

[0009] Preferably, after the conventional ceiling lamp assembly is mounted on the aperture, the mounting clips are clamped in the aperture by interference fit.

[0010] Preferably, the conventional ceiling lamp body includes an LED ceiling lamp and a down lamp.

(III) Advantageous effects

[0011] Compared with the prior art, the present invention provides a high-efficiency mounting structure for an LED ceiling lamp, having the following advantageous effects.

1. The assembly and disassembly of the high-efficiency mounting structure for an LED ceiling lamp are convenient; and the lamp can be aligned at the aperture in the ceiling and pressed in, and the lamp can be removed only by gently pressing on the back of the lamp surface.
2. On the basis of the conventional LED ceiling lamp, the mounting clips are fixed on the lamp from the sides via screws, and the high-efficiency mounting structure for an LED ceiling lamp is simple in structure and convenient to manufacture.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012]

FIG. 1 is a schematic diagram of an overall structure according to a high-efficiency mounting structure for an LED ceiling lamp of the present invention.

FIG. 2 is a schematic diagram of a mounting mechanism according to the high-efficiency mounting structure for an LED ceiling lamp of the present invention.

FIG. 3 is a schematic diagram of a mounting mechanism according to the high-efficiency mounting structure for an LED ceiling lamp of the present invention.

FIG. 4 is a schematic diagram of a mounting mechanism according to the high-efficiency mounting structure for an LED ceiling lamp of the present invention.

[0013] Reference numerals and denotations thereof: 1-ceiling; 2-conventional ceiling lamp assembly; 3-aperture; 4-conventional ceiling lamp body; 5-lamp holder; 6-mounting clip; 7-first mounting hole; 8-fastener; and 9-second mounting hole.

DETAILED DESCRIPTION

[0014] In order to make the technical means for realizing the present invention, creative features, achieved goals and effects easy to understand, the present invention will be further elaborated with specific implementations.

[0015] An example provides a high-efficiency mounting structure for an LED ceiling lamp.

[0016] As shown in FIGS. 1-4, a ceiling 1 and a conventional ceiling lamp assembly 2 are included. An outer surface of a lower end of the ceiling 1 is disposed with an aperture 3; the conventional ceiling lamp assembly 2 includes a conventional ceiling lamp body 4, a lamp holder 5, mounting clips 6, first mounting holes 7, fasteners 8 and second mounting holes 9; and the lamp holder 5 is fixedly mounted on an outer wall of a lower part of the conventional ceiling lamp body 4, and the mounting clips 6, the first mounting holes 7, the fasteners 8 and the second mounting holes 9 are all arranged in two groups.

[0017] Two groups of the second mounting holes 9 are disposed on outer surfaces of two sides of the lamp holder 5, and the first mounting hole 7 is disposed on an outer surface of one side of the mounting clip 6. The fastener 8 is a fixing screw or rivet, and the fastener 8 is connected to the first mounting hole 7 and the second mounting hole 9 in a threaded or riveted manner. Two groups of the mounting clips 6 are mounted on left and right sides of the conventional ceiling lamp body 4 via two groups of the fasteners 8. After the conventional ceiling lamp assembly 2 is mounted on the aperture 3, the mounting clips 6 are clamped in the aperture 3 by interference fit. The conventional ceiling lamp body 4 includes an LED ceiling lamp and a down lamp.

[0018] It is to be noted that the present invention is a high-efficiency mounting structure for an LED ceiling lamp. When the conventional ceiling lamp assembly 2 is assembled, the mounting clips 6 are fixed on the lamp from the sides using the fasteners 8 on the basis of the conventional LED ceiling lamp. A worker only needs to align the conventional ceiling lamp assembly 2 with the aperture 3 of the ceiling 1 when the conventional ceiling lamp assembly 2 is mounted, and gently and forcefully push the conventional ceiling lamp assembly 2 into the aperture 3, improving the efficiency of mounting the lamp. When the conventional ceiling lamp assembly 2 is disassembled, a user only needs to gently press on the back of the lamp surface, so that the conventional ceiling lamp assembly 2 can be removed, improving the efficiency of user removing the lamp. In the assembly and disassembly process, the user's hands or fingers are not damaged, and the ceiling of gypsum type is not scratched, improving the safety when the lamp is removed and reducing damage to the ceiling.

[0019] It is to be noted that in this specification, relational terms such as "first" and "second" (No.1 and No.2) are only used to distinguish one entity or operation from another entity or operation, and do not necessarily require or imply that there is any such an actual relationship or order between these entities or operations. Moreover, the terms "including", "containing" or any other variations are intended to cover non-exclusive inclusion, so that a process, method, article or device including a series of elements includes not only those elements, but also other elements not explicitly listed or elements inherent to such a process, method, article or device. Without further restrictions, an element defined by the phrase "including one" does not exclude the existence of other identical elements in the process, method, article or device including the element.

[0020] The basic principle, main features and advantages of the present invention have been shown and described above. It is to be understood by those skilled in the art that the present invention is not limited by the above example. What has been described in the above example and specification is only to illustrate the principles of the present invention. Without departing from the spirit and scope of the present invention, there will be various changes and improvements in the present invention, which fall within the scope of the claimed invention.

Claims

1. A high-efficiency mounting structure for an LED ceiling lamp, comprising a ceiling (1) and a conventional ceiling lamp assembly (2), wherein an outer surface of a lower end of the ceiling (1) is disposed with an aperture (3); the conventional ceiling lamp assembly (2) comprises a conventional ceiling lamp body (4), a lamp holder (5), mounting clips (6), first mounting holes (7), fasteners (8) and second mounting holes (9); and the lamp holder (5) is fixedly mounted on an outer wall of a lower part of the conventional ceiling lamp body (4); and the mounting clips (6), the first mounting holes (7), the fasteners (8) and the second mounting holes (9) are all arranged in two groups.

2. The high-efficiency mounting structure for an LED ceiling lamp according to claim 1, wherein two groups of the second mounting holes (9) are disposed on outer surfaces of two sides of the lamp holder (5), and the first mounting hole (7) is disposed at a middle part of an outer surface of one side of the mounting clip (6).

3. The high-efficiency mounting structure for an LED ceiling lamp according to claim 2, wherein the fastener (8) is a fixing screw, and the fastener (8) is connected to the first mounting hole (7) and the

second mounting hole (9) in a threaded or riveted manner.

4. The high-efficiency mounting structure for an LED ceiling lamp according to claim 3, wherein two groups of the mounting clips (6) are mounted on left and right sides of the conventional ceiling lamp body (4) via two groups of the fasteners (8).

5. The high-efficiency mounting structure for an LED ceiling lamp according to claim 4, wherein after the conventional ceiling lamp assembly (2) is mounted on the aperture (3), the mounting clips (6) are clamped in the aperture (3) by interference fit.

6. The high-efficiency mounting structure for an LED ceiling lamp according to claim 5, wherein the conventional ceiling lamp body (4) comprises an LED ceiling lamp and a down lamp.

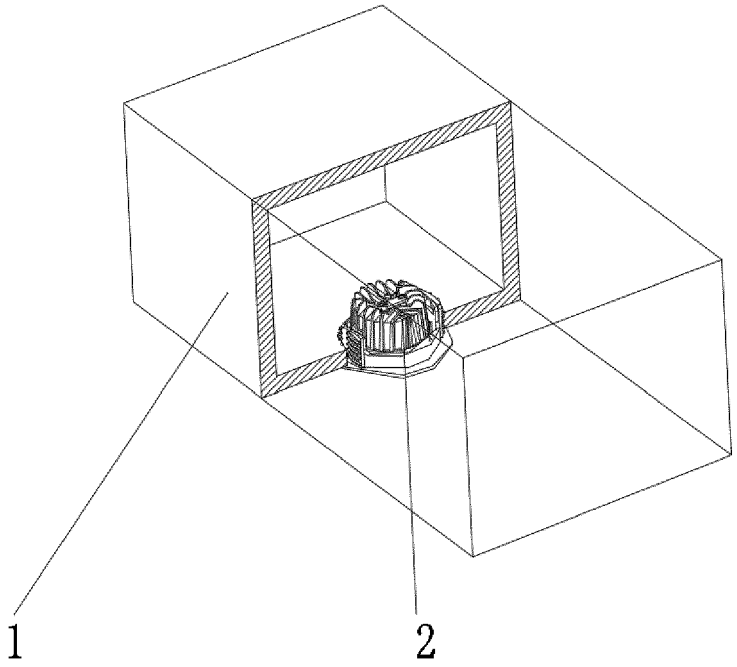

FIG. 1

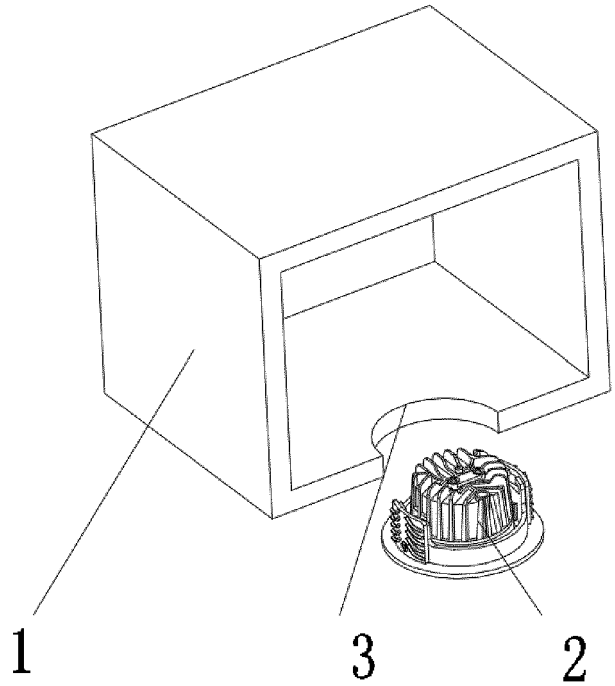

FIG. 2

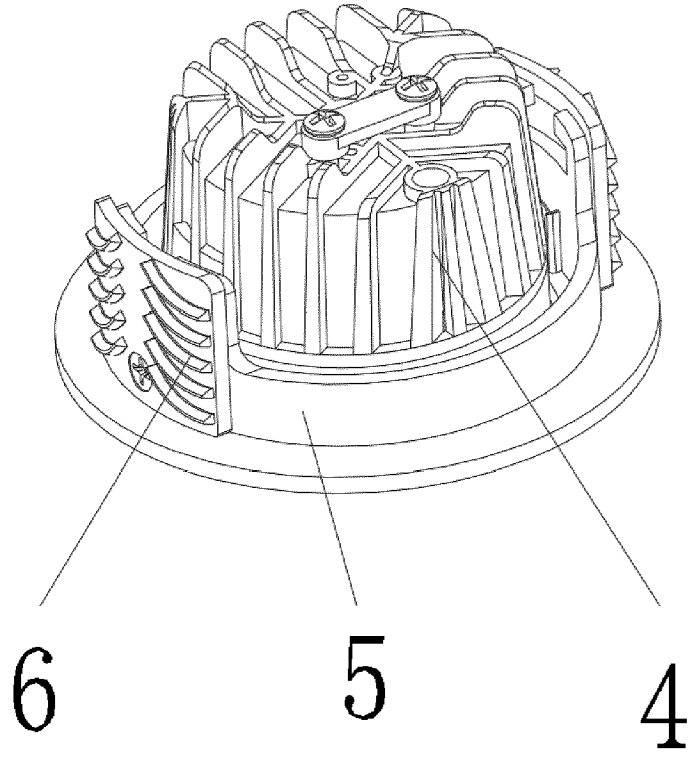

FIG. 3

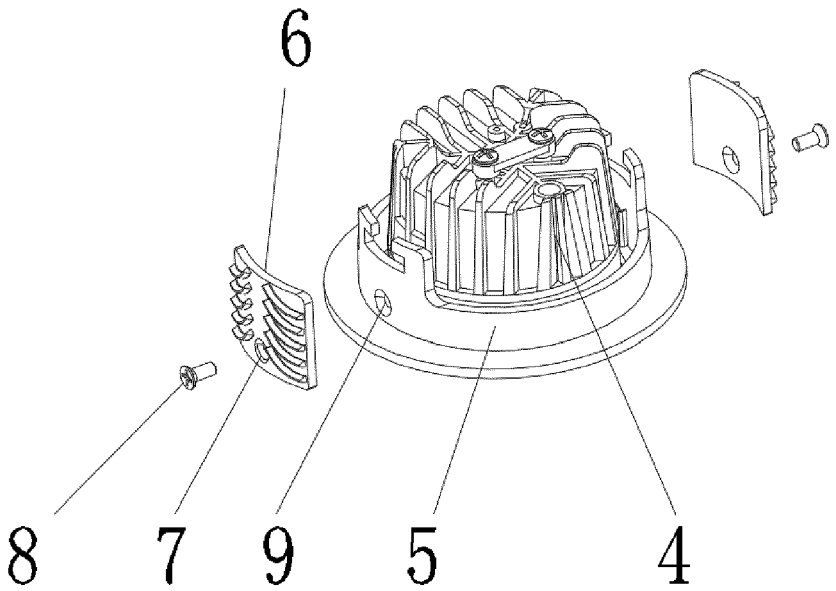

FIG. 4

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EUROPEAN SEARCH REPORT

Application Number
EP 24 17 9956

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	DE 20 2020 100763 U1 (VERLICHTING MORTIER BVBA [BE]) 8 May 2020 (2020-05-08) * paragraphs [0028] - [0030]; claim 1; figures 2,3,4 *	1-6	INV. F21V17/12
X	EP 4 067 737 A1 (B LIGHTED B V [BE]) 5 October 2022 (2022-10-05) * paragraphs [0025] - [0031]; figures 1, 4E *	1	
X	CN 114 636 127 A (HUIZHOU LEISHI PHOTOELECTRIC SCIENCE AND TECH LIMITED COMPANY) 17 June 2022 (2022-06-17) * figures 1,3,6 *	1-6	
X	EP 2 757 310 A1 (BRILONER LEUCHTEN GMBH [DE]) 23 July 2014 (2014-07-23) * paragraph [0036]; figures 7,9 *	1-6	

TECHNICAL FIELDS SEARCHED (IPC)

F21V
F21Y

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	22 November 2024	Krikorian, Olivier

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 24 17 9956

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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