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(54) **A CFL LIGHT SOURCE CAPABLE OF REPLACING A J-TYPE HALOGEN LAMP**

(57) A CFL light source replacing a J-type halogen lamp includes electrodes, a casing, a ballast, a CFL light tube, a connecting member, a socket and pins. A spacing of the electrodes, at two sides of the ballast, follows completely a standard length of a J-type halogen lamp; and a structure of the electrode complies with an R7s or RX7s lamp holder design. The ballast is in the casing, the electrodes are at two ends of the casing and the CFL light tube is connected with the casing that it can be inserted into or pulled out of the casing, forming a CFL energy-saving light source with two energizing ends, which can directly replace a J-type halogen light source in an ordinary lawn lamp. Besides, the casing and the CFL light tube can be designed as an integral unit or two separate units connected through the pins and the socket.

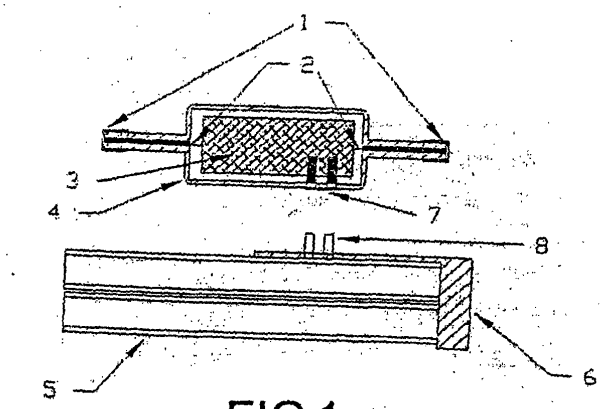


FIG.1

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Description

BACKGROUND OF THE INVENTION

a) Field of the Invention

[0001] The present invention relates to a lamp-set, and more particularly to a CFL (Compact Fluorescent Lamp) light source capable of replacing a J-type halogen lamp.

b) Description of the Prior Art

[0002] As a source of light projection lamp-sets, the J-type halogen lamp has been widely used in outdoor and engineering illumination, with an averaged power of 100W to 2000W, a usual lifetime of usage of 500h to 1000h, and an illumination efficiency of 10 In/watt. It is well known that the J-type halogen lamp has issues of high energy consumption and low illumination efficiency. Nevertheless, due to a unique structure of a J-type lamp-set and a unique method of electric connection of R7s lamp caps, the J-type lamp cannot be still replaced by an existing energy-saving light source.

SUMMARY OF THE INVENTION

[0003] The primary object of the present invention is to provide a CFL light source capable of replacing a J-type halogen lamp to solve the problem that an existing CFL light tube cannot be applied to a J-type lamp-set.

[0004] Accordingly, the present invention discloses a CFL light source capable of replacing a J-type halogen lamp including two electrodes and one ballast, wherein the aforementioned electrodes, which are R7s or RX7s lamp caps, are located at two sides of the ballast, with a distance between ends of the two electrodes being 68mm - 88mm, 108mm - 128mm, 179mm - 199mm, or 244mm - 264mm.

[0005] In a preferred embodiment of the present invention, a rigid body, a piston-type nest structure installed with an elastic body or a screw-type rotating nest is connected between the aforementioned electrodes and the ballast.

[0006] In a preferred embodiment of the present invention, the aforementioned CFL light source includes a housing, the aforementioned ballast is provided in the housing and the aforementioned housing is in a rectangular, elliptical or other shape.

[0007] In a preferred embodiment of the present invention, the CFL light source includes a CFL light tube which is inserted into or glued with the housing.

[0008] The present invention is provided with a good structure to hold both the CFL light tube and the J-type halogen lamp-set. In comparison with the prior art, the present invention facilitates replacing the J-type tubes in all kinds of the J-type halogen lamp-sets with the CFL light sources to achieve effects of saving energy and improving the illumination efficiency, without renewing the lamp-sets.

[0009] To enable a further understanding of the said objectives and the technological methods of the invention herein, the brief description of the drawings below is followed by the detailed description of the preferred embodiments.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010]

FIG. 1 shows a cutaway view of an embodiment of the present invention.

FIG. 2 shows a schematic view of another embodiment of the present.

FIG. 3 shows a schematic view of a connection between a ballast and electrodes of the present invention.

FIG. 4 shows a schematic view of another connection between a ballast and electrodes of the present invention.

FIG. 5 shows a schematic view of a shape of a housing of the present invention.

FIG. 6 shows a schematic view of another shape of a housing of the present.

FIG. 7 shows a cutaway view of the present invention which is installed in a lawn lamp.

FIG. 8 shows a side view of the present invention which is installed in a lawn lamp.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0011] Referring to FIG. 1, the present invention is a CFL light source capable of replacing a J-type halogen lamp, comprising two electrodes 1, a ballast 3, a CFL light tube 5 and a housing 4.

[0012] The electrodes 1 are located at two sides of the ballast 3 and are made by metal working, punching or casting. The electrodes 1 are riveted or latched on top ends of two hollow struts of the housing 4. The housing 4 is made by an insulation material and a central chamber of the housing 4 is provided with the ballast 3. Hollow struts at two sides of the housing 4 are provided with connection wires 2 to be connected with the electrodes 1. According to a magnitude of power for replacement, a distance between ends of the electrodes 1 is designed to be 68mm - 88mm, 108mm - 128mm, 179mm - 199mm or 244mm - 264mm. On the other hand, the electrodes 1 are R7s or RX7s lamp caps which fit with R7s or RX7s lamp holders on a lamp-set.

[0013] A rigid body, a piston-type nest structure installed with an elastic body or a screw-type rotating nest is connected between the electrodes 1 and the ballast 3. As shown in FIG. 1, the rigid body is connected between the electrodes 1 and the ballast 3. Under this condition, the top ends of the two hollow struts of the housing 4 are directly installed with the electrodes 1. On the other hand,

the piston-type nest structure installed with the elastic body can be used, and under this condition, the hollow struts at the two sides of the housing 4 are nested with the hollow elastic bodies and top parts of the hollow struts are provided with sleeve-type electrodes which can be sliding. By pressing the electrodes, the elastic bodies are compressed, allowing the electrodes to be extendable in a certain range.

[0014] In addition, as shown in FIG. 4, under a condition that the screw-type rotating nests are used, the hollow struts at the two sides of the housing 4 are designed with threads and top parts of the hollow struts are sleeve-type electrodes with threads to match with the hollow struts. The distance between the electrodes can be adjusted in a certain range by rotating the sleeves.

[0015] The ballast 3 is provided in the housing 4 which is designed as a rectangular, elliptical or other shape, according to a shape of the lamp-set, as shown in FIGS. 4 to 6. The CFL light tube 5 and the housing 4 are inserted or glued together, wherein insertion structures of the CFL light tube 5 and the housing 4 are a socket 7 on the housing 4 and an insertion pin 8 on a connection member 6 which is connected with the CFL light tube 5.

[0016] Referring to FIG. 1, the CFL light tube and the ballast in the housing are inserted together through the insertion pin and the socket. When the light tube is damaged, it can be pulled out for replacement. Or, as shown in FIG. 2, the connection wires on the CFL light tube can be connected directly with the ballast in the housing, and then the connection member of the CFL light tube is glued with the housing directly, so as to assemble into an integrated CFL light source.

[0017] The present invention is assembled as follows. First of all, the socket 7 is latched into the housing 4, the ballast 3 is connected with the socket 7 and the connection wires 2, and then the ballast 3 is installed into the housing 4. After passing the connection wires 2 through the hollow struts at the two sides of the housing 4 to connect the electrodes 1 and the connection wires 2, the electrodes 1 are fixed at two ends of the housing 4. Finally, the housing 4 is sealed, thereby assembling into a ballast which is provided with a function of R7s connection.

[0018] The insertion pin 8 is riveted on the connection member 6 and the CFL light tube 5 is connected on the insertion pin 8. Next, the CFL light tube 5 is glued and fixed with the connection member 6, thereby assembling into a replaceable pull-and-insertion tube which fits with the ballast 3.

[0019] It is of course to be understood that the embodiments described herein is merely illustrative of the principles of the invention and that a wide variety of modifications thereto may be effected by persons skilled in the art without departing from the spirit and scope of the invention as set forth in the following claims.

Claims

1. A CFL light source capable of replacing a J-type halogen lamp, comprising two electrodes and one ballast, wherein the aforementioned electrodes are located at two sides of the ballast and are R7s or RX7s lamp caps, with a distance between ends of the two electrodes being 68mm - 88mm, 108mm - 128mm, 179mm - 199mm or 244mm - 264mm.

2. The CFL light source capable of replacing a J-type halogen lamp, according to claim 1, wherein a rigid body, a piston-type nest structure installed with an elastic body or a screw-type rotating nest is connected between the electrodes and the ballast.

3. The CFL light source capable of replacing a J-type halogen lamp, according to claim 1 or 2, wherein the CFL light source includes a housing, the ballast is provided in the housing and the housing is in a rectangular, elliptical or other shape.

4. The CFL light source capable of replacing a J-type halogen lamp, according to claim 3, wherein the CFL light source includes a CFL light tube which is inserted or glued with the housing.

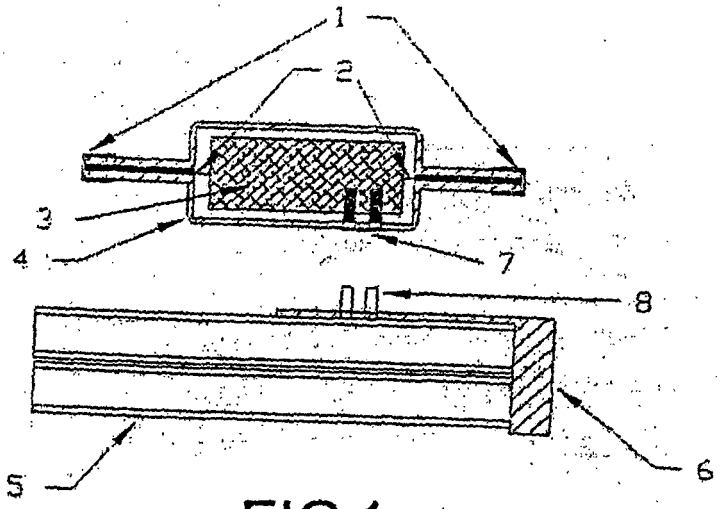


FIG.1

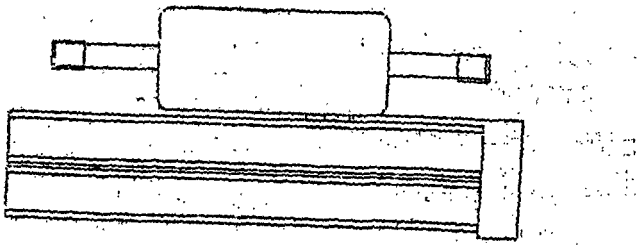


FIG.2

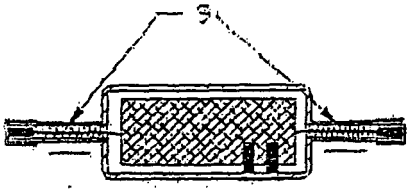


FIG.3

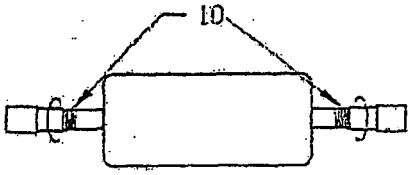


FIG.4

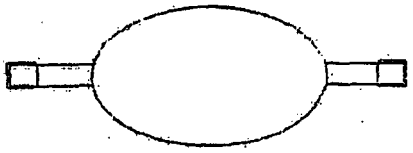


FIG.5



FIG.6

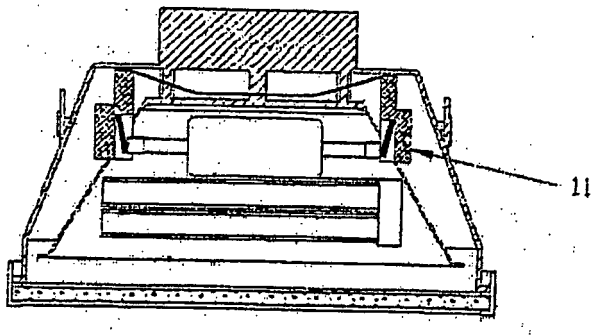


FIG.7

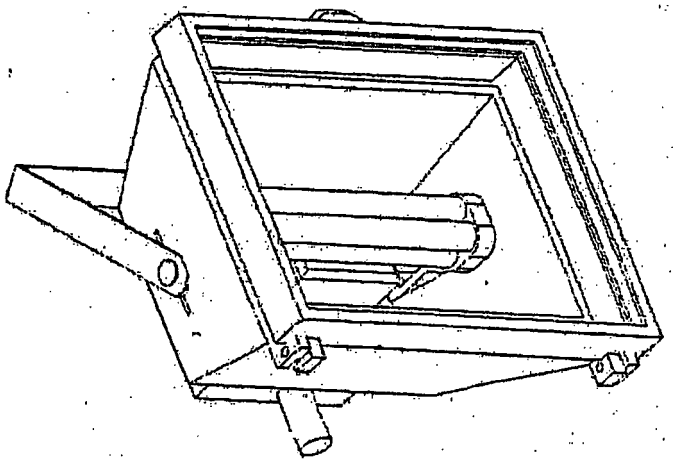


FIG.8

INTERNATIONAL SEARCH REPORT

International application No.
PCT/CN2007/001685

A. CLASSIFICATION OF SUBJECT MATTER

See the extra sheet

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)

IPC:F21S,F21V,H01J61,H01J7

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)

WPI PAJ EPODOC CNPAT

+halogen+, halid?, haloid, CFL?, (compact+ w fluores+),ballast+, amperite?, lamppress??, press??, holder?, adapter?, electrode?, pole?

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	CN2334134Y (LUXIANG SCIENCE AND TECHNOLOGY), 18 Aug.1999 (18.08.1999) see pages 1-2, figs.1-3	1-4
X	US6429592B1 (Shewen Zhou), 06 Aug.2002 (06.08.2002) see page 1, col. 2, figs.1-2	1-4
A	US5471375A (Kenneth Lau), 28 Nov.1995 (28.11.1995) the whole	1-4
A	CN1684220A (DAI, Peijun), 19 Oct. 2005 (19.10.2005) the whole	1-4

☐ Further documents are listed in the continuation of Box C. ☒ See patent family annex.

* Special categories of cited documents:

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"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim (S) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
17 Jul.2007(17.07.2007)	**30 Aug. 2007 (30.08.2007)**
Name and mailing address of the ISA/CN The State Intellectual Property Office, the P.R.China 6 Xitucheng Rd., Jimen Bridge, Haidian District, Beijing, China 100088 Facsimile No. 86-10-62019451	Authorized officer WANG,Zhihua Telephone No. (86-10)62085782

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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/CN2007/001685

Patent Documents referred in the Report	Publication Date	Patent Family	Publication Date
CN2334134Y	18.08.1999	CN2319681Y	19.05.1999
		CN2342494Y	06.10.1999
		CN2305000Y	20.01.1999
		AU8478098A	01.03.1999
		WO9908043A	18.02.1999
		US6146170A	14.11.2000
US6429592B1	06.08.2002	None	
CN1684220A	19.10.2005	None	
US5471375A	28.11.1995	US5597233A	28.01.1997
		US6083021A	04.07.2000

Form PCT/ISA /210 (patent family annex) (April 2007)

INTERNATIONAL SEARCH REPORT

International application No.
PCT/CN2007/001685

CLASSIFICATION OF SUBJECT MATTER:

H01J61/04(2006.01) i
H01J61/56(2006.01) i
H01J7/44(2006.01) i
F21S6/00(2006.01) i
F21V23/02(2006.01) i

Form PCT/ISA /210 (extra sheet) (April 2007)