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LED DAYLIGHT LAMP

TECHNICAL FIELD

- 5 The utility model relates to an elongated illuminating device, in particular to an LED daylight lamp.

BACKGROUND ART

- 10 LED daylight lamps are fairly common in indoor public places and for household. With the continuous development of manufacturing technique of white LED members and remarkable reduction of production cost, a daylight lamp having a plurality of LEDs replaces the traditional daylight lamp and becomes a new generation green environment-friendly lighting source. Present LED daylight lamp, for example, a novel LED daylight
15 lamp disclosed by China utility model CN201141526Y is mainly formed by a lamp panel, a glass tube, a lamp cap and a heat-radiating mold strip for transmitting and dissipating heat produced by the lamp panel. In this kind of daylight lamp, because the lamp panel and the heat-radiating mold strip are enclosed in the glass tube, heat produced by an LED on the
20 lamp panel can not be effectively dissipated out of the glass tube resulting in accumulation of heat in the tube and causing over high working temperature of the LED in the glass tube to accelerate aging and shorten the service life of the LED. Moreover, this kind of lamp is different from the traditional daylight lamp in lighting mode, dazzling light spots in the
25 tube can be seen from outside of the tube due to uneven surface brightness of the lamp, so eyes are easily burned in watching.

SUMMARY OF THE UTILITY MODEL

- 30 The utility model mainly solves the problems of unreasonable structure, poor heat dissipation, uneven brightness and easy damage to eyes existing in the prior art of LED daylight lamps and provides an LED daylight lamp with simple and reasonable structure, good heat dissipation and even brightness.

- 35 The utility model has the technical solution as follows for solving the above technical problems: an LED daylight lamp comprises a lamp holder, an elongated lamp and a lampshade and is characterized in that a pair of connecting walls extend outwardly from the outer wall of the lamp holder and stretch to both ends along the length direction, the intersection angle between the opposite wall surfaces of the connecting walls and the
40 outer wall of the lamp holder is provided with a connecting slot fitting to the elongated lamp, the elongated lamp is inserted in the connecting slot

and contacts with the outer wall of the lamp holder, and the lampshade is retained on the two connecting walls of the lamp holder via a blocking device. With the above structure, because the elongated lamp is positioned in the connecting slot which taking the outer wall of the lamp holder as the bottom, and the back surface of the whole elongated lamp contacts with the outer wall of the lamp holder, the heat contact surface is large and the heat dissipating effect is better, and thus the working temperature of the LED is within a proper range.

Preferably, the blocking device has a longitudinal opening on the cambered surface of the lampshade, two back-to-back blocking edges which are folded outwardly are machined on the opening, the opposite walls of the two connecting walls are respectively provided with a blocking slot corresponding to said each blocking edge on the lampshade, and said two blocking edges on the lampshade are blocked in the corresponding blocking slots on the connecting walls.

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Preferably, said lampshade is a translucent or ivory-white plastic member with an arc cross section, the upper end of each connecting wall is provided with a reflecting surface, the outer wall is connected between the two connecting walls, the elongated lamp contacts with the outer wall, and the lamp holder is a hollow aluminum square tube body. With the translucent or ivory-white lampshade, dazzling LED light of the elongated lamp falling on the surface of the lampshade turns to a non-dazzling soft surface light source with even brightness, thus meeting the long-term use custom of people. The reflecting surface fully utilizes the LED light ray to improve the lighting effect. The lamp holder which is the hollow aluminum square tube body has a larger area for exchanging heat with surrounding air, so that the heat dissipating effect of the elongated lamp is better, and the lamp holder being the hollow square tube body facilitates the arrangement of a current driver in the square cavity thereof.

Preferably, a layer of oil-guiding silicone grease is coated between the elongated lamp and the blocking slots and between the elongated lamp and the outer wall such that the heat conducting performance between the elongated lamp and the connecting slots and the outer wall is favorable.

Preferably, a fixing device for fixing the daylight lamp on a support is also included, the fixing device comprises a pair of grooves positioned on both side surfaces of the lamp holder along the length direction and a mounting block, both ends of the mounting block are respectively provided with a blocking head which is buckled on the corresponding groove of the lamp holder, and the mounting block is provided with a plurality of mounting holes. The mounting block can be fixed on the support by screw bolts, and both ends of the mounting block are substantially flexible to press the lamp holder into the mounting block in mounting till the blocking heads are buckled in the grooves on both sides of the lamp holder. This structure facilitates the mounting and replacement of the LED, when the LED breaks down, the lamp holder is just pulled out and then directly blocked into the mounting block after the LED is replaced.

Preferably, both ends of the lampshade are respectively sleeved by a lamp cover in which a connecting device is fixed and connected with the elongated lamp, said connecting device comprises a connecting member on which a connecting arm extending along the length direction of the elongated lamp is disposed, a buckle body is arranged on the connecting arm, and a buckle seat fitting to the buckle body is disposed at the corresponding position on the surface of the elongated lamp. The lamp covers are fixed to the lampshade, and the connecting device arranged in the lamp cover fixes the elongated lamp to the lamp cover so as to fix the elongated lamp. The connecting device is fixed in the lamp cover, and when the lamp covers are sleeved on the lamp shade, the buckle body on the connecting arm is buckled in the buckle seat on the surface of the elongated lamp. The above structure is reasonable in design and simple for assembly, saves time, and without chemical adhesive that easily erodes the tube body in assembly, the service life of the LED tube body is prolonged, and the toxicity and pollution to assembly operators are reduced.

Preferably, the buckle body is a hook body which is disposed at the end part of the connecting arm, and the buckle seat is a slotted hole on which the hook body is buckled. In this solution, the end part of the connecting arm is provided with the hook body which is in a shape of a half of an arrow and is positioned on the lower surface of the connecting arm, the slotted hole on the elongated lamp corresponds to the hook body, and the hook body and the slotted hole form a buckle structure, so that the assembly is simple and the connection is firm.

Preferably, said buckle body is a raised cylinder body which is disposed at or close to the end part of the connecting arm, said buckle seat is a slotted hole in which the cylinder body is buckled. In this

solution, the cylinder body is arranged at or close to the end part of the connecting arm and positioned on the lower surface of the connecting arm, the cylinder body can be a wholly and evenly cylindrical body or a square body or be a truncated conical or trapezoidal body; the slotted hole on the elongated lamp corresponds to the cylinder body, and said slotted hole can be designed into a round slotted hole or a square slotted hole according to the cylinder body, so that the cooperation between the cylinder body and the slotted hole is tighter. The cylinder body and the slotted hole form a buckle structure, so the assembly is simple and the connection is firm.

Preferably, the buckle body is a metal sheet which is arranged at or close to the end part of the connecting arm; the buckle seat is a magnetic body on which the metal sheet is attached. In the solution, the metal sheet is arranged at or close to the end part of the connecting arm, the magnetic body on the elongated lamp corresponds to the metal sheet, said magnetic body can be disposed on the surface of the elongated lamp or embedded into the lamp body, and in order to obtain the fixing and positioning effect of replacement, the metal sheet can be provided with a protrusion, and the magnetic body is correspondingly provided with a concave body. The metal sheet and the magnetic body form a connecting structure, so that the assembly is simple and the connection is firm.

The elongated lamp of the utility model is positioned in the connecting slot which takes the outer wall as the bottom, and the whole back surface of the elongated lamp contacts with the outer wall of the lamp holder, so that the heat contacting area is large, the heat dissipating effect of the elongated lamp is favorable, and the working temperature of the LED is within a proper range, thereby prolonging the service life of the LED; With the translucent or ivory-white lampshade, dazzling LED light of the elongated lamp falling on the surface of the lampshade turns to a non-dazzling and soft surface light source with even brightness, thus meeting the long-term use custom of people; the elongated lamp and the lamp cover are fixed in a buckle form, so the assembly is simple and saves time, and the service life of the tube body is prolonged without chemical adhesive for bonding.

BRIEF DESCRIPTION OF THE DRAWINGS

- Figure 1 is a structural schematic diagram of the utility model;
- Figure 2 is an A-A sectional view of figure 1;
- Figure 3 is another A-A sectional view of figure 1;
- Figure 4 is a structural schematic diagram of the buckle body and the buckle seat of the utility model;
- Figure 5 is another structural schematic diagram of the buckle body

and the buckle seat of the utility model; and

Figure 6 is the third structural schematic diagram of the buckle body and the buckle seat of the utility model.

5 DETAILED DESCRIPTION OF THE EMBODIMENTS

The technical solution of the utility model is further described by combining following embodiments and the figures.

Referring to figure 2, the LED daylight lamp of the utility model comprises a lamp holder 1, an elongated lamp 5 and a lampshade 6. The lamp holder 1 is a hollow square tube body manufactured by rolling aluminum alloy, the outer wall 7 of the lamp holder 1 is provided with a pair of connecting walls 2, 11 raising outwardly to form a herringbone opening, the upper end of each connecting wall is provided with a reflecting surface 20, the intersection angle between the opposite wall surfaces of the connecting walls and the outer wall 7 of the lamp holder 1 is provided with a connecting slot 12 fitting to the elongated lamp 5 in thickness and width, the elongated lamp 5 is inserted in the connecting slot, and the back surface of the elongated lamp 5 contacts with the outer wall 7 of the lamp holder 1. In order to improve the heat conducting performance between the elongated lamp 5 and the connecting slot 12, a layer of oil-guiding silicon grease 8 is coated between the bottom and the side surface of the connecting slot 12 and the elongated lamp.

The lampshade 6 is a translucent or ivory-white injection molded member with an arc cross section having an opening and is retained on the two connecting walls 2, 11 of the lamp holder 1 via a blocking device. The blocking device is provided with two back-to-back blocking edges 4, 10 which are folded outwardly on the opening of the lampshade, the opposite walls of the two connecting walls 2, 11 are provided with blocking slots 3 or 9 corresponding to the blocking edges on the lampshade 6, respectively, and the blocking edges 4, 10 on the lampshade 6 are blocked in the corresponding blocking slots 3, 9 on the two connecting walls.

For the convenience of use, the utility model further comprises a fixing device for fixing the daylight lamp on a support. The fixing device includes a pair of grooves 15, 18 positioned on both side surfaces of the lamp holder 1 along the length direction and a mounting block 16. The mounting block 16 is provided with a plurality of mounting holes 17 and can be fixed on the support by screw bolts, and both ends of the mounting block are provided with blocking head 19 which are buckled on the grooves of the lamp holder, respectively.

As shown in figure 3, another structure of connection of the lampshade and the lamp holder is given. In the structure, the blocking

device is provided with two back-to-back blocking edges 4', 10' which are folded inwardly on the opening of the lampshade 6, the outer surfaces of the connecting walls 2, 11 are respectively provided with a blocking slot 3' or 9' corresponding to each blocking edge on the lampshade 6, the two blocking edges 4', 10' on the lampshade 6 are blocked in corresponding blocking slots 3', 9' on the connecting walls 2, 11 to retain the lampshade 6 on the lamp holder 1.

As shown in figure 1, a lamp tube 21 is sleeved between both ends of the lampshade, and lamp covers are fixed to the elongated lamp 5 via a connecting device. The connecting device comprises a connecting member 22 which is tightly attached on the inner wall of the lamp tube, a positioning block 23 is disposed on the inner wall of the lamp tube, and the connecting member 22 is provided with a positioning slot 29 fitting to the positioning block such that the connecting member is firmly fixed in the lamp covers. A connecting arm 24 extending in the length direction of the elongated lamp is arranged on the connecting member, a buckle body 25 is disposed on the connecting arm, and a buckle seat 26 fitting to the buckle body is arranged at the corresponding position on the surface of the elongated lamp 5, and the buckle body is buckled on the buckle seat. The upper part of the buckle body is provided with a separating device (not shown) which includes an arm body, one end of the arm body is connected to the front end of the buckle body, and the other end extends out of the lamp covers, the arm body has a fulcrum through which an operator can press down the tail end of the arm body to pry the buckle body out of the buckle seat.

Figure 4 shows another structure form of the buckle body 25 and the buckle seat 26. In this form, the buckle body is a hook body 251 which is in a shape of a half of an arrow and is positioned on the lower surface of the connecting arm, the buckle seat is a slotted hole 261 corresponding to the hook body, and the buckle body is buckled in the slotted hole.

Figure 5 shows another structure form of the buckle body 25 and the buckle seat 26. In this form, the buckle body is a cylinder body 252 which is positioned on the lower surface of the connecting arm, the cylinder body can be a wholly and evenly cylindrical body or a square body, or be a truncated conical or trapezoidal body, the buckle seat is a slotted hole 262 corresponding to the cylinder body, and the slotted hole 262 can be designed into a round or square slotted hole according to the cylinder body.

Figure 6 shows the third structure form of the buckle body 25 and the buckle seat 26. In this form, the buckle body is a metal sheet 253 which is disposed at or close to the end part of connecting arm, the buckle seat is a magnetic body 263 corresponding to the metal sheet, the

magnetic body can be arranged on the surface of the elongated lamp or embedded into the lamp body to obtain the fixing and positioning effect of replacement, the metal sheet can be provided with a protrusion 27, the magnetic body is provided with a corresponding concave body 28, and
5 the protrusion is buckled in the concave body when the metal sheet is connected to the magnetic body.

The forgoing embodiments are merely illustrative of the invention. Various modification, supplements or equal replacements of the embodiments will be apparent to those skilled in the art without departing
10 from the spirit and scope limited by the appended claims.

While specific terms such as connecting slot, outer wall, blocking slot, elongated lamp, lampshade, etc. are used in the description frequently, there is a possibility of using other specific terms. Such terms are merely for illustrating the ideal of the invention, and any explanation
15 of additional limitation for them are construed as departing from the spirit of the invention.

Claims

1. An LED daylight lamp, comprising a lamp holder, an elongated lamp and a lampshade, wherein a pair of connecting walls (2, 11) extend
5 outwardly from the outer wall (7) of the lamp holder (1) and stretch to both ends along the length direction, the intersection angle between the opposite wall surfaces of said connecting walls and the outer wall of the lamp holder (1) is provided with a connecting slot (12) fitting to the
10 elongated lamp (5), said elongated lamp (5) is inserted in the connecting slot (12) and contacts with the outer wall (7) of the lamp holder (1), and the lampshade (6) is retained on the two connecting walls (2, 11) of the lamp holder (1) via a blocking device.

2. The LED daylight lamp according to claim 1, wherein said
15 blocking device has a longitudinal opening on the cambered surface of the lampshade (6), two back-to-back blocking edges (4 and 10) which are folded outwardly are machined on the opening, the opposite walls of the two connecting walls (2 and 11) are respectively provided with a blocking
20 slot (3 or 9) corresponding to said each blocking edge (4 or 10) on the lampshade (6), and said two blocking edges (4 and 10) on the lampshade (6) are blocked in the corresponding blocking slots (3 and 9) on the connecting walls (2 and 11).

3. The LED daylight lamp according to claim 1, wherein said
25 blocking device has a longitudinal opening on the cambered surface of the lampshade (6), two back-to-back blocking edges (4' and 10') which are folded inwardly are machined on the opening, the opposite walls of the two connecting walls (2 and 11) are respectively provided with a
30 blocking slot (3' or 9') corresponding to said each blocking edge (4' or 10') on the lampshade (6), and said two blocking edges (4' and 10') on the lampshade (6) are blocked in the corresponding blocking slots (3' and 9') on the connecting walls (2 and 11).

4. The LED daylight lamp according to claim 2 or claim 3,
35 wherein said lampshade (6) is a translucent or ivory-white plastic member with an arc cross section, the upper end of said each connecting wall (2, 11) is provided with a reflecting surface (20), and said lamp holder (1) is a hollow aluminum square tube body.

40 5. The LED daylight lamp according to claim 4, wherein a layer of oil-guiding silicone grease (8) is coated between the elongated lamp (5) and the blocking slots (3, 9) and between the elongated lamp (5) and the

outer wall (7).

6. The LED daylight lamp according to claim 5, wherein a fixing device for fixing the daylight lamp on a support is also included, said fixing device comprises a pair of grooves (15, 18) positioned on both side surfaces of the lamp holder (1) along the length direction and a mounting block (16), both ends of the mounting block (16) are respectively provided with a blocking head which is buckled on the corresponding groove of the lamp holder, and the mounting block is provided with a plurality of mounting holes (17).

7. The LED daylight lamp according to claim 6, wherein both ends of the lampshade (6) are respectively sleeved by a lamp cover (21) in which a connecting device is fixed and connected with the elongated lamp (5), said connecting device comprises a connecting member (22) on which a connecting arm (24) extending along the length direction of the elongated lamp is disposed, a buckle body (25) is arranged on the connecting arm, and a buckle seat (26) fitting to the buckle body is disposed at the corresponding position on the surface of the elongated lamp (5).

8. The LED daylight lamp according to claim 7, wherein said buckle body (25) is a hook body (251) which is disposed at the end part of the connecting arm, said buckle seat (26) is a slotted hole (261), and the hook body is buckled on the slotted hole.

9. The LED daylight lamp according to claim 7, wherein said buckle body (25) is a raised cylinder body (252) which is disposed at or close to the end part of the connecting arm, and said buckle seat (26) is a slotted hole (262) in which the cylinder body is buckled.

10. The LED daylight lamp according to claim 7, wherein said buckle body is a metal sheet (253) which is disposed at or close to the end part of the connecting arm, the buckle seat (26) is a magnetic body (263), and the metal sheet is attached on the magnetic body.