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(12) # EUROPEAN PATENT SPECIFICATION

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(54) **Unit for suspended lighting assembly.**

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Description

Background of the Invention

(a) Field of the invention:

This contrivance relates to a hang type lighting assembly for decoration particularly composed of a plurality of illumination units.

(b) Prior art:

Quite a number of hang type lighting fixtures suspended from a ceiling and others and composed of two or more illumination units connected together are commercialized. With such conventional hang type lighting fixtures for decoration, the illumination units are connected or supported with hooking devices; at installation then the electrical wiring work is performed separately. Moreover, the wiring work is troublesome as fixing with machine screws is necessary, particulary troublesome for the lighting fixtures composed of a large number of illumination units.
Because of the same reason, alteration in the combination of said illumination units or cleaning of the illumination equipment is troublesome and takes a long time.

To change illumination light and to improve illumination image, a light transmitting cover or globe to cover outside of respective illumination unit is provided. By the conventional cover, however, luminance differs noticeably between near positions of the light source and the surroundings, and lamp image can hardly be eliminated and the improvement of illumination image is not very effective.

In addition, it is necessary to attach the cover to each illumination unit before installing the lighting fixture. This is accompanied by such disadvantages as breakage of the cover at the time of installation or more intricated work.

A decorative light assembly is known from US-A-3061715, which may be used to decorate Christmas trees and spell out words. It is formed from a plurality of interconnecting units, and strings of units may be flexed. One form of unit comprises a spherical cover in two hemispherical pieces. A tube which opens into the centre of the sphere extends away from the point on each hemispherical piece remote from the diameter defining the hemisphere. The units are joined by plugging a tube from one spherical cover into a tube from the next. Two electrically conductive connectors extend spaced apart within the tube, and extend across the internal cavity of the spherical cover and into the other tube of the cover. A light bulb is supported by the connectors in the cavity, in electrical connection between the connectors. When a tube of one cover is plugged into a tube of another, the electrical connectors of the two covers are electrically connected. The material of the spherical covers is relatively thin compared with the size of the cavities within the covers. It is not suggested in US-A-3061715 that the completed assembly could be hung or suspended, and it is not clear that this could be done without the units separating under the force of gravity.

FR-A-365362 discloses a lighting assembly in which the units each comprise a support member which holds a bulb, and metal electrical conductors pass through the support member, making electrical contact with the bulb and supplying power to it. Each electrical conductor extends beyond the edges of the support member and terminates in a hook. Units may be electrically connected together by engaging the hooked ends of the conductors of one unit with the hooked ends of the conductors of another unit. It is not explicitly stated in FR-A-365362 whether the hooking engagement of the electrical conductors is also intended to support the units nor whether the assembly of hooked together units is intended to be suspended.

Summary of the Invention

According to the invention there is provided an illumination unit and a lighting assembly as set forth in the claims.

An embodiment of the invention provides a hang type lighting fixture for decoration with which the illumination units connection work completes the electrical wiring work at the same time, yet the work is very easy, and changes in the combination of the illumination units after connection or cleaning is also easy, and the illumination image can be improved easily by eliminating lamp image of the light source.

The cover may be formed of glass.

The illumination units may be connected together by setting the upper hooks of one illumination unit on the lower hooks of another illumination unit positioned above the 1st illumination unit.

The conductive suspension members may provide both electrical connection and support for the illumination units, and in this way the connection work of the illumination units comprising the lighting assembly also serves as the electrical wiring work. Accordingly, changes in the layout or combination and cleaning work may be easier. The light transmissive cover may reduce the image of the bulb and improve the illumination image.

Brief Description of the Drawings

An embodiment of the present invention, given

by way of non-limiting example, will now be described with reference to the accompanying drawings, in which like parts are designated by the same reference numerals and in which:

Fig. 1 is a partially cut-away perspective view of an illumination unit embodying the present invention;

Fig. 2 is a side sectional view of the main parts which show the composition of the illumination unit of Figure 1; and

Fig. 3 is a front view showing the condition of use of a decorative suspended lighting assembly embodying the invention.

Description of the Preferred Embodiment

Referring now to the accompanying drawings, Fig. 1 is a partially cut-away perspective view of an illumination unit for a suspended decorative lighting fixture embodying the invention. One illumination unit is provided with two hooking members (1 and 2) of the two conducting wires. At the ends of said hooking members (1, 2), upper hooks (1a, 2a) and the lower hooks (1b, 2b) are provided respectively.

Two hooking members are held by a fixing member (4) made of an insulating material so as not to come in contact each other.

Two electrode wires of the bulb (6) are inserted into the fixing member (4) and are respectively put in contact with the hooking member (1) and (2), and the bulb (6) is held by the fixing member (4).

A cover or globe (3) made of light transmitting glass material is attached at approximately the center of the illumination unit.

Each cover part (3) is approximately in the shape of semi-circular cylinder with a dent (3a) near the center. Two parts are mounted from both sides of the illumination unit so that the bulb and the fixing member (4) are fitted to said dent (3a), and a ring form spring (5) is fitted and fixed to the pheripherry of the parts (3).

Fig. 2 is a side sectional view showing composition of the main part of the illumination units for forming a hang type lighting fixture for decoration.

The bulb (6) and the fixing member (4) are positioned at the dent (3a) formed approximately at the center of the cover (3) composed of light transmitting glass material.

A groove not illustrated is formed at the part in contact with the hooking member (1) in the cover (3), and two cover parts (3) can be attached to the illumination unit by putting the respective inner sides in contact with the illumination unit.

The spring (5) formed in ring form is fitted to the groove (3b) formed on the peripheral surface of the cover (3) and the two parts are fixed by elasticity of said spring (5).

Fig. 3 is a front view showing condition of use of said hang type lighting fixture for decoration.

To the fittings (11, l2) of the attaching device (10) fixed to the surface of ceiling, power voltage is supplied through the power line not illustrated.

To each one of said fittings (11, 12), the upper hooks (1a, 2a) of the illumination unit A are hooked, and source voltage is supplied to the hooking member of the illumination unit A when the two fittings are connected.

In the cover (3), source voltage is supplied to the bulb connected to the hooking member by the electrode wires and the bulb glows.

In addition, source voltage is also supplied to the hooking member of the illumination unit B hooked to the lower hooks (1b, 2b) of the illumination unit A respectively by the upper hooks (1a, 2a). Accordingly, the bulb of the illumination unit B also glows in the same manner as the illumination unit A.

The same is true with the illumination unit C hooked to the lower hooks (1b, 2b) of the illumination unit B by the upper hooks (1a, 2a).

As described above, the installation work of the hang type lighting fixture for decoration and the wiring work can be carried out at a time by connecting the hooks formed at both ends of the hooking member of each illumination unit one after another.

Installation of the hang type lighting fixture for decoration can be made simpler and alteration of combination after connection or cleaning work can also be made easily.

Moreover, lamp image can be eliminated and illumination image can be improved by covering the bulb of each illumination unit with a cover made of light transmitting glass material.

The work to detach the cover from the illumination unit at cleaning or bulb replacement can be made easier by fixing said globe with a spring.

Claims

1. An illumination unit adapted to be connected with at least one other such unit to form a lighting assembly, the unit having: first and second conductive members (1;2); a cover (3) of light transmissive material attached to said conductive members (1;2), said cover (3) being solid apart from a cavity (3a) for containing a bulb (6) to which power may be supplied via said conductive members (1;2), the cover having separable parts (3) defining said cavity (3a), said cavity (3a) being defined by first and second recesses provided respectively in said parts (3); and a circular spring (5) holding said parts (3) together, wherein the said assembly is suspendable and the conductive members (1;2) are suspension members having hooks (1a,2a;1b,2b) at both ends, and in that the said

assembly comprises an insulating member (4) through which said conductive members (1;2) pass and clamped between said parts (3), the insulating member holding a bulb (6) in said cavity (3a), which bulb is connected to said conductive members (1;2).

2. A lighting assembly comprising at least two illumination units according to claim 1, electrically interconnected with each other and suspended one from another by means of said conductive suspension members (1;2).

Revendications

1. Elément d'éclairage destiné à être relié à au moins un autre élément identique pour former un dispositif d'éclairage, l'élément comportant : un premier et second élément conducteurs (1 ; 2) ; une enveloppe (3) en matériau transparent à la lumière, fixée aux éléments conducteurs (1 ; 2), cette enveloppe (3) étant pleine sauf à l'endroit d'une cavité (3a) destinée à contenir une ampoule (6) pouvant être alimentée en courant par les éléments conducteurs (1 ; 2), l'enveloppe comportant des parties séparables (3) formant la cavité (3a), cette cavité (3a) étant définie par une première et seconde partie en creux formées respectivement dans les parties (3) ; et un ressort circulaire (5) maintenant les parties (3) ensemble, élément caractérisé en ce que le dispositif peut être suspendu, en ce que les éléments conducteurs (1 ; 2) sont des éléments de suspension munis de crochets (1a, 2a ; 1b, 2b) aux deux extrémités, et en ce que le dispositif comprend un élément isolant (4) à travers lequel passent les éléments conducteurs (1 ; 2), cet élément isolant étant bloqué entre les parties (3) et portant une ampoule (6) à l'intérieur de la cavité (3a), cette ampoule étant branchée aux éléments conducteurs (1 ; 2).

2. Dispositif d'éclairage comprenant au moins deux éléments d'éclairage selon la revendication 1, ces éléments d'éclairage étant branchés électriquement les uns aux autres et suspendus les uns aux autres par les éléments de suspension conducteurs (1 ; 2).

Patentansprüche

1. Beleuchtungseinheit, die zur Verbindung mit zumindest einer weiteren derartigen Einheit zur Bildung einer Beleuchtungsbaugruppe ausgebildet ist, mit ersten und zweiten leitenden Gliedern (1, 2); einer an den leitenden Gliedern (1, 2) angebrachten Abdeckung (3) aus lichtdurchlässigem Material, die mit Ausnahme eines Hohlraums (3a) zur Aufnahme einer Lampe (6) massiv ist, der Energie über die leitenden Glieder (1, 2) zuführbar ist, und die den Hohlraum (3a) definierende trennbare Teile (3) aufweist, wobei der Hohlraum (3a) durch erste und zweite in den Teilen (3) vorgesehene Vertiefungen definiert ist; und einer die Teile (3) zusammenhaltenden ringförmigen Feder (5), wobei die Baugruppe aufhängbar ist und die leitenden Glieder (1, 2) als Hängglieder mit Haken (1a, 2a; 1b, 2b) an beiden Enden ausgebildet sind, wobei die Baugruppe ein zwischen den Teilen (3) eingeklemmtes Isolierglied (4) umfaßt, das die leitenden Glieder (1, 2) durchsetzt, und wobei das Isolierglied eine mit den leitenden Gliedern (1, 2) verbundene Lampe in dem Hohlraum (3a) hält.

2. Beleuchtungsbaugruppe mit zumindest zwei Beleuchtungseinheiten nach Anspruch 1, die über die leitenden Hängglieder (1, 2) elektrisch miteinander verbunden sind und untereinander hängen.

FIG. 1

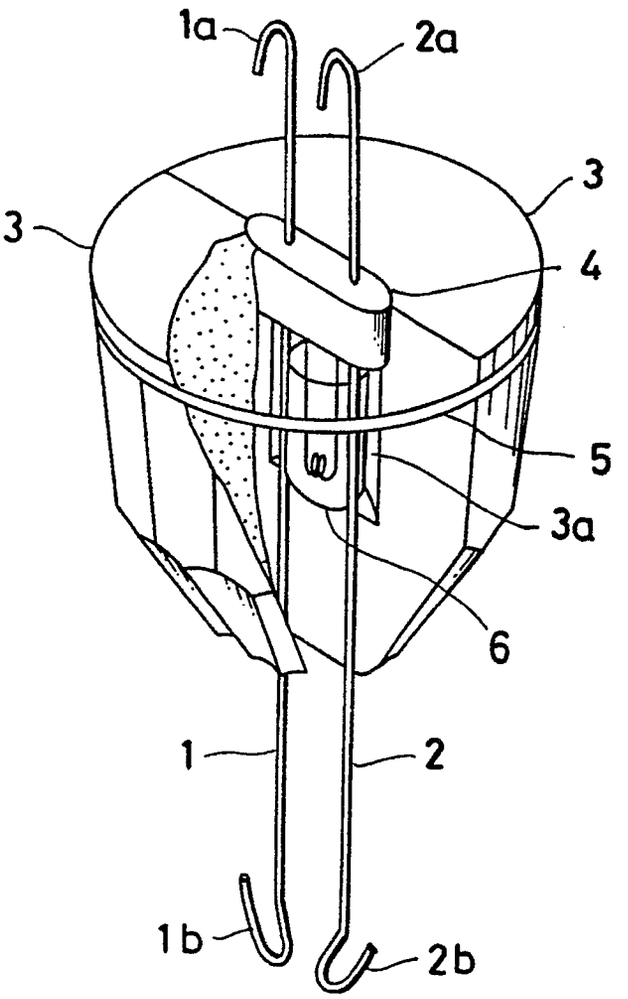

FIG. 2

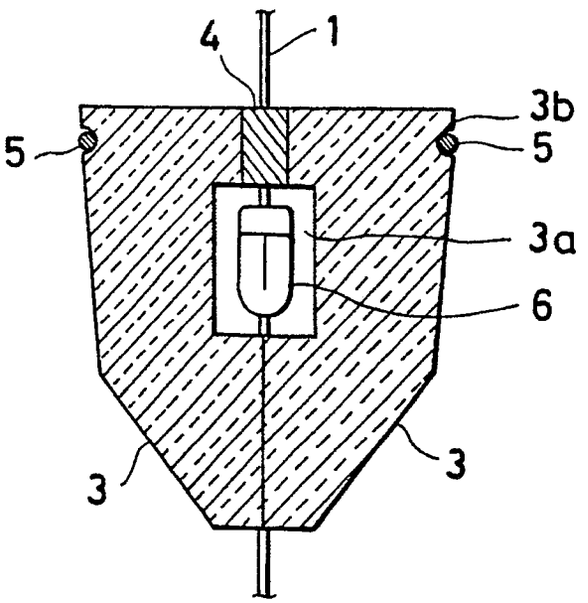

FIG. 3