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(54) **A DEVICE FOR FASTENING A LAMP ON A SURFACE.**

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Description

This invention relates to a device for fastening a lamp on a surface, which lamp comprises a frame provided with a round opening and a fastening plate of a resilient material, said plate being positioned in the opening and slideably fastened on the edge thereof and which fastening plate is intended to be fastened on the surface, whereby the frame is provided with a conic annular surface positioned adjacent the edge of the opening, and the fastening plate is provided with a sealing surface roughly following said annular surface.

When angular lamps are fastened on room walls or ceilings, for instance, it is important for reasons of outward appearance that the lamps are in a certain position with respect to the defining lines of the wall or the ceiling. It is usually required that the sides of the lamp are in parallel with said lines.

In general, lamps are fastened on a fastening surface by means of screws extending through holes of the frame into fastening holes formed on said surface. Because the fastening holes of the surface are seldom so positioned with respect to each other that the lamp on mounting would take the desired position, the holes of the frame are usually provided with an elongated shape so that they follow a circumferential line drawn, around the center of the lamp. A corresponding structure is known, for instance, from box switches.

A disadvantage of these known structures is the insufficient waterproofing, on account of which water can get into the mounting space of the lamp or the switch through the relatively large openings of the frame. If waterproofing is required from a structure of this kind, it is necessary to provide it with a separate piece or film of plastic, which is fitted between the frame and the mounting space.

British Patent Specification 1,281,680 discloses a fastening device for a lamp, in which device the proofing between the lamp frame and a fastening plate turnable with respect to the frame is obtained by means of two conical surfaces which are pressed against each other, whereby the sealing surface of the fastening plate is of a resilient material, If the fastening plate is made of rubber, turning of the frame causes problems.

The object of the present invention is to provide a fastening device for a lamp, which device enables easy fastening of the lamp on a surface in a desired position without impairing the water proofing. The device according to the invention is characterized in that the coning angle of said sealing surface differs from the coning angle of the annular surface so that the outer edge of the sealing surface is positioned in the free state of the surface closer to the annular surface than the inner edge of the sealing surface. When the fastening plate is loosely secured on the surface, the frame can be lightly turned with respect thereto, because the surfaces make contact with each other only along the outer edge of the sealing surface. When the frame is in the right position, the screws are tightened, whereby the sealing surface is pressed over the whole width thereof against the annular surface of the frame, thus sealing the gaping between the frame and the fastening plate. Waterproof through holes can, in a manner known per se, be provided in the fastening plate for conductors.

With regard to the proofing effect, it is advisable to locate the sealing surface of the fastening plate inside the frame, whereby it is protected against impurities to a greater degree than in case it were positioned outside of the frame.

With regard to the resilience of the sealing surface, it is advisable that it is positioned on the outer edge of the fastening plate.

One preferred embodiment of the device according to the invention is more closely described in the following with reference to the attached drawing, wherein

Figure 1 is a view of a lamp seen from the side of the surface, and

Figure 2 is a vertical section of the lamp along the line II-II of Figure 1.

The lamp according to the drawing comprises a frame 1 of metal or plastic, for instance, the sides of said frame forming a quadrangle, a light transmitting globe 2 being secured thereon. The inner side of the frame is provided with a projection, on which a lamp bulb holder 3 is secured for a bulb 4. Further, a plate 5 supporting a reflector 6 is fastened in the middle of the frame.

A round projection 7 having the shape of a truncated cone is formed in the central portion of the frame, the outer end of which projection is provided with an internal flange or edging 8 forming an edge for a round opening located in the middle of the frame.

A disc-like fastening plate 9 of a resilient material, e.g., of a semi-rigid plastic, is positioned in the central opening of the frame, which plate is provided with water-proof through holes 10 for conductors and lugs 11 for fastening screws. In addition, a conductor joint 12 is provided on the inner surface on the plate.

An annular flange 13 projecting towards the underlying surface is provided on the fastening plate at a distance from the edge of the planar portion of the fastening plate, the free edge of said flange being provided with an outwardly protruding expansion 14, the distance of which from the planar portion of the fastening plate is slightly greater than the thickness of the edging 8. The fastening plate 9 is locked in the frame 1 in such a manner that the edging 8 of the frame is positioned between the planar portion of the fastening plate and the expansion 14. Said locking prevents any greater displacement of the fastening plate in the direction of the axis of the frame opening, but allows turning of the fastening plate in said frame opening.

An outer edge of the fastening plate 9 is provided with a sealing surface 15 which roughly follows the conical surface of the frame projection 7, said sealing surface being pressed against the inner surface of the projection. The coning angle

of the sealing surface is slightly greater than that of the projection 7, as a result of which the outer edge of the sealing surface makes contact with the frame projection 7 prior to the inner surface of the sealing surface, when the fastening plate 9 is displaced upwards in Figure 2. On account of the slight difference between said coning angles, an excellent proofing is provided between the annular surface of the projection 7 and the sealing surface 15, when the fastening plate 9 is tightened in place by means of screws. The difference between the coning angles can be in the range of a few degrees.

For the mounting of the lamp in place, the fastening plate 9 is first loosely secured on the fastening surface by means of screws, whereafter the frame is turned so as to obtain the desired position. Thereafter the screws are tightened, whereby waterproofing is provided between the annular surface of the projection 7 and the sealing surface 15, when the last-mentioned resiliently yields when the fastening plate is diplaced with respect to the frame towards the fastening surface.

The point of waterproofing can be alternatively formed in the outer surface of the projection 7 or in such a manner that said projection 7 is provided with an annular surface (Figure 2) extending slantingly outwards and upwards, whereby also the sealing surface 15 is turned upwards. In the last-mentioned case, the coning angle of the sealing surface is smaller than that of the annular surface of the projection 7. The fastening plate 9 can also have such a shape that the sealing surface is not located on the outer edge of the plate but at a distance therefrom.

Claims

1. Device for fastening a lamp on a surface, which lamp comprises a frame (1) provided with a round opening and a fastening plate (9) of a resilient material, said plate being positioned in the opening and slideably fastened on the edge thereof and which fastening plate is intended to be fastened on the surface, whereby the frame (1) is provided with a conic annular surface (7) positioned adjacent the edge of the opening, and the fastening plate (9) is provided with a sealing surface (15) roughly following said annular surface, characterized in that the coning angle of said sealing surface (15) differs from the coning angle of the annular surface so that the outer edge of the sealing surface (15) is positioned in the free state of the surface closer to the annular surface (7) than the inner edge of the sealing surface.

2. Device according to claim 1, characterized in that the sealing surface (15) of the fastening plate (9) is positioned inside the frame (1).

3. Device according to claim 1, characterized in that the sealing surface (15) is positioned on the outer edge of the fastening plate (9).

4. Device according to claim 1, characterized in that the coning angle of the sealing surface (15) is greater than that of the annular surface (7) of the frame.

Patentansprüche

1. Vorrichtung zum Befestigen einer Lampe auf einer Oberfläche, wobei die Lampe einen Rahmen (1) aufweist, der mit einer runden Öffnung und einer Befestigungsplatte (9) aus einem federnden Werkstoff versehen ist, die Platte in der Öffnung angeordnet und an deren Rand verschiebbar befestigt ist, und die Befestigungsplatte auf der Oberfläche befestigt werden soll, wobei der Rahmen (1) eine nahe dem Rand der Öffnung angeordnete, konische ringförmige Fläche (7) aufweist und die Befestigungsplatte (9) eine Dichtungsfläche (15) hat, die der ringförmigen Fläche in etwa folgt, dadurch gekennzeichnet, daß der Konizitätswinkel der Dichtfläche (15) von demjenigen der ringförmigen Fläche so abweicht, daß im freien Zustand der Dichtfläche (15) deren Außenrand der ringförmigen Fläche (7) näher liegt als der Innenrand der Dichtfläche.

2. Vorrichtung nach Anspruch 1, dadurch gekennzeichnet, daß die Dichtfläche (15) der Befestigungsplatte (9) im Rahmen (1) angeordnet ist.

3. Vorrichtung nach Anspruch 1, dadurch gekennzeichnet, daß die Dichtfläche (15) auf dem Außenrand der Befestigungsplatte (9) angeordnet ist.

4. Vorrichtung nach Anspruch 1, dadurch gekennzeichnet, daß der Konizitätswinkel der Dichtfläche (15) größer als derjenige der ringförmigen Fläche (7) des Rahmens ist.

Revendications

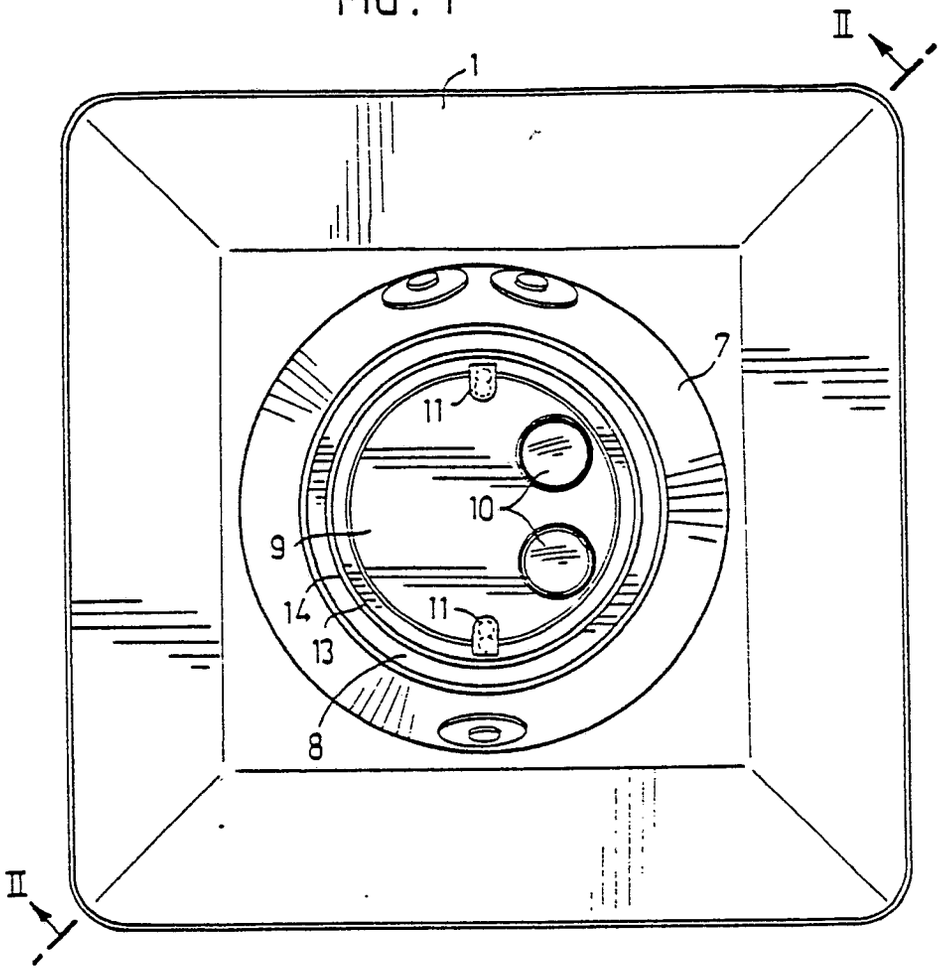
1. Dispositif pour fixer une lampe sur une surface, laquelle lampe comporte un cadre (1) présentant une ouverture circulaire, et une plaque de fixation (9) en une matière élastique, cette plaque étant disposée dans l'ouverture, étant fixée à coulissement sur le bord de celle-ci et étant prévue pour être fixée sur la surface, le cadre (1) comportant une surface annulaire conique (7) disposée adjacente au bord de l'ouverture, et la plaque de fixation (9) comportant une surface d'étanchéité (15) suivant en gros cette surface annulaire, caractérisé en ce que l'angle de conicité de la surface d'étanchéité (15) est différent de l'angle de conicité de la surface annulaire, de telle sorte que le bord extérieur de la surface d'étanchéité (15) est disposé, lorsque la surface est à l'état libre, plus près de la surface annulaire (7) que le bord intérieur de la surface d'étanchéité.

2. Dispositif selon la revendication 1, caractérisé en ce que la surface d'étanchéité (15) de la plaque de fixation (9) est disposée à l'intérieur du cadre (1).

3. Dispositif selon la revendication 1, caractérisé en ce que la surface d'étanchéité (15) est disposée sur le bord extérieur de la plaque de fixation (9).

4. Dispositif selon la revendication 1, caractérisé en ce que l'angle de conicité de la surface d'étanchéité (15) est supérieur à celui de la surface annulaire (7) du cadre.

FIG. 1



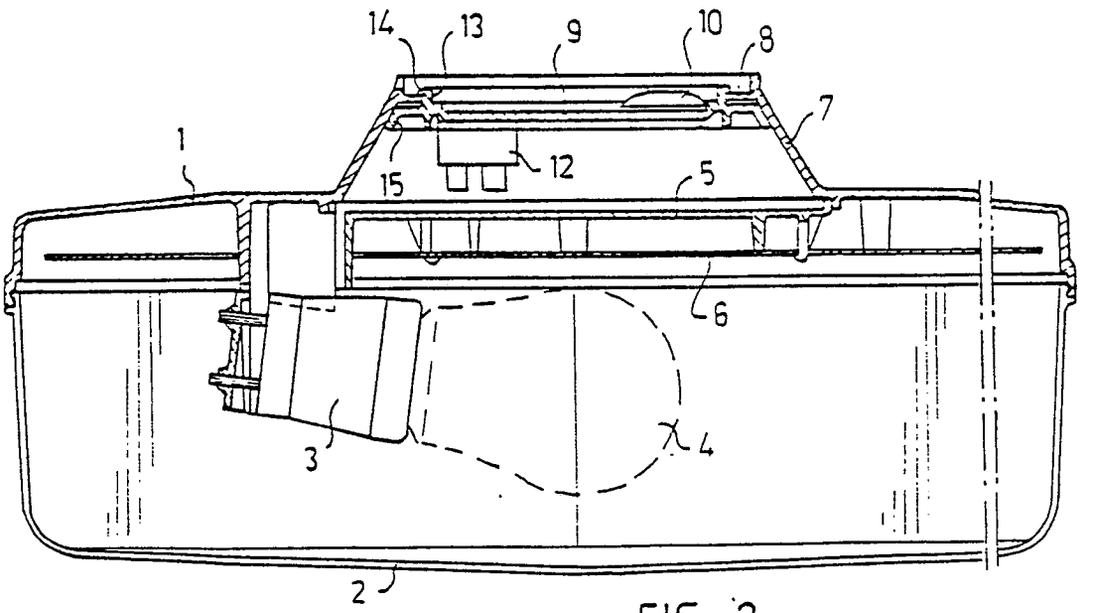


FIG. 2