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(72) Inventor: **Reggiani, Fabio**
20057 Vedano al Lambro Milan (IT)

(74) Representative: **Martegani, Franco et al**
Franco Martegani S.r.l.
Via Carlo Alberto, 41
20052 Monza (Milano) (IT)

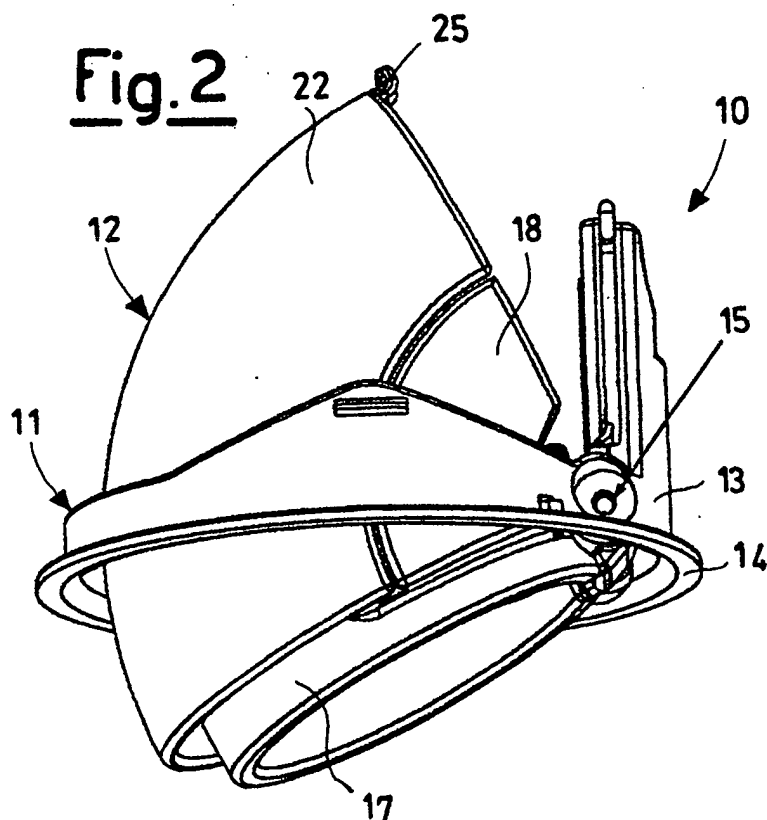
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(71) Applicant: **Reggiani S.p.A. Illuminazione**
20050 Sovico (Milan) (IT)

(54) **Directable recessed illuminating device**

(57) A directable recessed illuminating device able to be positioned in a seat or opening comprising a support structure (11) and a rotating illuminating unit (12) bearing a bulb socket and a light bulb. According to the

invention said rotating illuminating unit (12) is hinged (in 15) to said support structure (11), said illuminating unit (12) being composed of at least two elements (18, 22) in turn being able to rotate independently of each other.



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Description

[0001] The present invention relates to a directable recessed illuminating device.

[0002] Currently, numerous types of lighting devices exist in the field of illumination, in particular, the recessed type, that provides a wide range of orientating possibilities. More in particular, recessed illumination devices exist that can be orientated towards the exterior of a false ceiling or some other reference surface inside which they are applied and recessed and from which various types of light beam must be emitted.

[0003] Moreover, the devices currently available on the market are rather complicated in structure and difficult to manoeuvre, making them problematic to use.

[0004] Furthermore it is not particularly easy to obtain a recessed device that permits a wide range of positions according to specific requirements without involving complex construction and difficult installation.

[0005] From this brief description of the state of the art however, it has become apparent that there is a need for a recessed illumination device that overcomes the technical drawbacks described.

[0006] Therefore one main aim of the present invention is to resolve the aforesaid problems of prior state of the art in a manner that is extremely simple, economical, and particularly functional.

[0007] A further aim is to realise a device of the type described above that is particularly simple to construct and install.

[0008] In answer to said aims, according to the present invention, it was decided to realise a directable, recessed illuminating device having the aforesaid characteristics as described in the following appended claims.

[0009] The structural and functional characteristics of the present invention and its advantages compared to known state of the art will be made even more obvious through the following description with reference to the appended drawings, that demonstrate an example of an directable recessed illumination device.

[0010] In the drawings:

- figure 1 shows a view in perspective of a directable recessed illumination device according to the present invention;
- figure 2 is a further view of the device shown in figure 1 but in a different position;
- figure 3 is a view in perspective of the device shown in figure 1, with blow-ups of certain components for easier comprehension;
- figure 4 is an enlarged cross section of a detail of the coupling of the two parts shown in figure 1 on the line IV-IV;
- The pairs of figures 5a-5b, 6a-6b, 7a-7b, 8a-8b, 9a-9b, show further views in perspective and in cross-section respectively, of a further example of a directable recessed illumination device according to

the present invention orientated in various positions.

[0011] In the drawings, a directable recessed illumination device according to the invention is identified throughout with the reference numeral 10, and in the illustrated example, it comprises a support structure 11, and an illuminating unit 12 that can be rotated inside said support.

[0012] The rear support element 13 is shown in figures 1 and 2 attached to the support structure 11.

[0013] Figures 1 and 2 show how the support structure 11 foresees a frame 14 set inside a seat or opening in a false ceiling (neither of which are shown in the drawing). Articulating elements such as a pair of hinges 15, can be attached to the frame 14 at hinge points 16 foreseen in the rotating unit 12.

[0014] The rotating unit 12 comprises a basic ring shaped element 17 whereon, in a limited portion of said element, the two hinge points 16 are mounted. Within its structure, the basic ring-shaped element 17 houses a bulb socket with the relative light bulb (not shown). The basic ring-shaped element 17 also supports two triangular wings 18, arch-shaped along one side, that bear arched sliding ridges 19 protruding towards the exterior and that are positioned at a certain angle α , that is quantifiable as 30° for example.

[0015] These sliding ridges 19 are engaged to slide in complementary grooves 20 configured in two portions, also arch shaped, positioned on opposite sides of an oscillating cover 22. The two wings are arch-shaped along their sides that face the cover 22.

[0016] Both the interior of cover 22, and the exterior of the two triangular wings 18, provided with said reciprocal engaged sliding means are mounted with arrest elements 23 and 24 that determine the maximum oscillation of cover 22 in relation to the wings 18.

[0017] Furthermore, cover 22, whose internal face can also act as a reflecting surface, is also mounted with a further arrest element 25 on its uppermost terminal part, that on interaction with the support structure 11, determines the maximum oscillation of the cover and the wings, in other words, of the rotating unit 12, in relation to the same support structure 11, thus permitting the light beam to be directed as required.

[0018] Figure 4 shows an enlarged cross-section of a possible shape of both the sliding ridges 19 and the complementary grooves 20. In the illustrated example, said elements are realised configured as a rib positioned at the edge of a lip for the ridge 19, and a hollow groove also positioned at the edge of a lip for the groove 20.

[0019] The pair of hinges 15 can be realised, for example, using a fixing screw and a Belleville washer shown in schematic form only in their hinged position.

[0020] The support structure 11 can be configured in a different shape and, as shown in further examples, can be milled for precision positioning 26.

[0021] Moreover, the rear support element 13 can be

extended in bracket appendix form 27 to facilitate positioning of the complete unit. In this manner, by using a structure according to the present invention, it is possible to orientate the various elements, directing the light beam according to specific requirements, and by turning the cover 22 to various positions, it is possible to hide the view of the light bulb from observation.

[0022] Therefore the cover 22 also acts as a light shade.

[0023] The figures 5a-5b to 9a-9b illustrating the unit, demonstrate the various ways of changing the position of the whole rotating unit 12 in relation to the support structure 11, as well as changing the reciprocal position of the cover 22 and the two triangular wings that form the rotating unit 12.

[0024] Figures 6a-6b even show how it is possible to move the basic ring-shaped element 17 that supports the triangular wings 18 back from the rest position in figures 5a-5b, to obtain an unusual light direction such as that shown by the X axis in figure 6b.

[0025] The following arrangements show how the X-axis of the lighting unit can be set in a wide variety of positions with different light beam directions.

[0026] It is obvious from the aforesaid description and the references to the various figures that a directable recessed illumination unit according to the invention is particularly useful and advantageous, thus achieving the aims mentioned in the introduction of the description.

[0027] Naturally the form of the directable recessed illumination unit can be differed from that shown in the drawings, provided simply as an example and by no means limiting in concept, just as the materials employed can be varied.

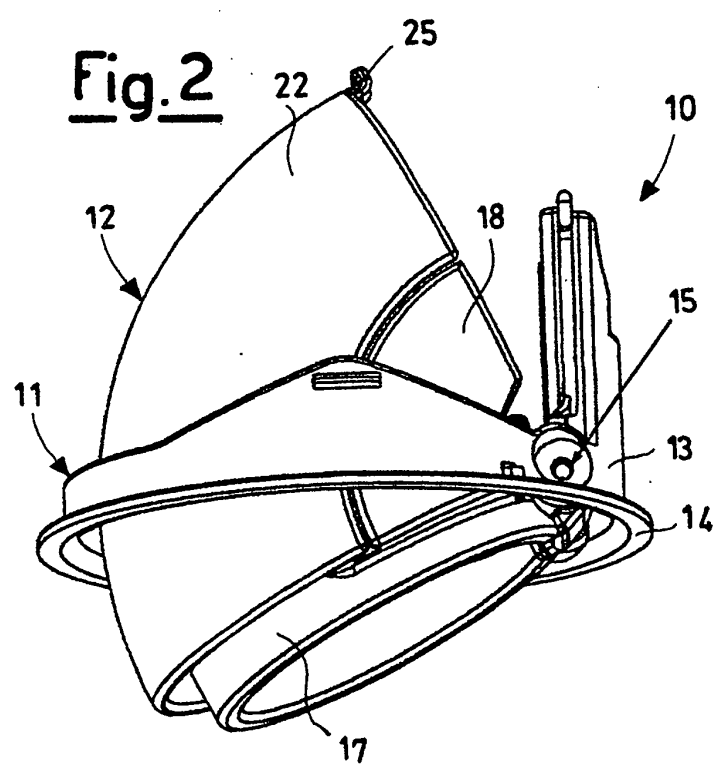
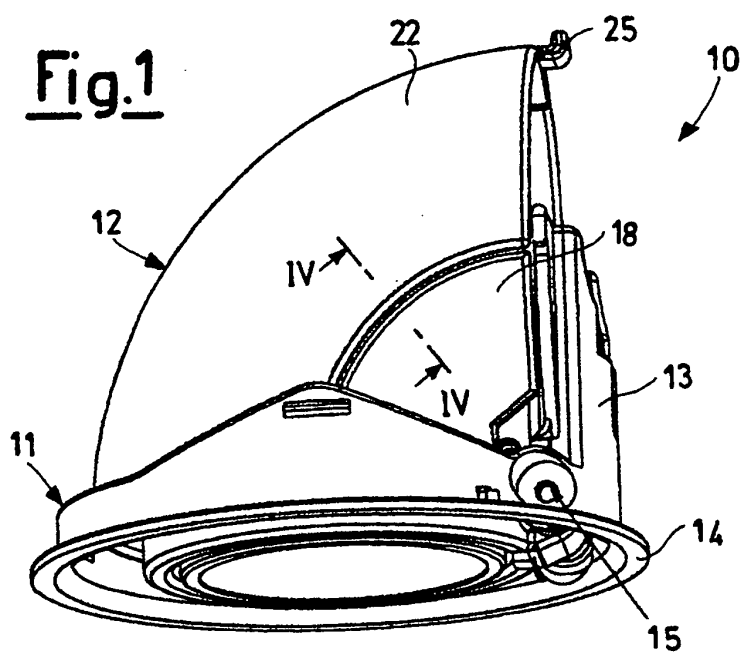
[0028] The context for invention rights is therefore limited and defined by the appended claims.

Claims

1. Directable recessed illuminating device that can be positioned in a seat or opening comprising a support structure (11) and a rotating illuminating unit (12) bearing a bulk socket and light bulb, **characterised in that** said rotating illuminating unit (12) is hinged (in 15) to said support structure (11), said illumination unit (12) comprising at least two elements (18, 22) that can in turn, also be rotated independently of each other.
2. Illuminating device according to claim 1 **characterised in that** said at least two elements of said illuminating device (12) comprise a radially external cover (22) and radially internal wings (18) provided with reciprocal engaging and sliding elements (19, 20).
3. Illuminating device according to claim 2 **character-**

ised in that said cover (22) and said wings (18) can be rotated independently of each other.

4. Illuminating device according to claims 2 or 3 **characterised in that** both said cover (22) and said wings (18) bear arrest elements (23, 24) that determine a maximum oscillating angle (α) between said cover (22) and said wings (18).
5. Illuminating device according to claim 2 **characterised in that** said wings (18) are two in number, are triangular and arch-shaped along the side facing said cover (22) and are attached to a basic ring-shaped element (17).
6. Illuminating device according to claim 5 **characterised in that** said basic ring-shaped element (17) bears a bulb socket.



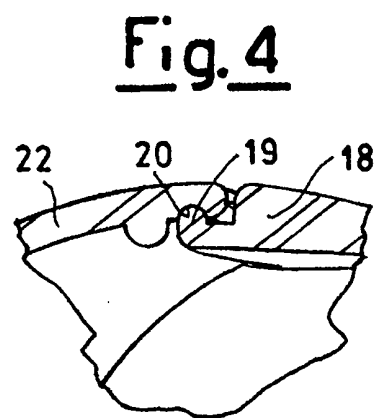
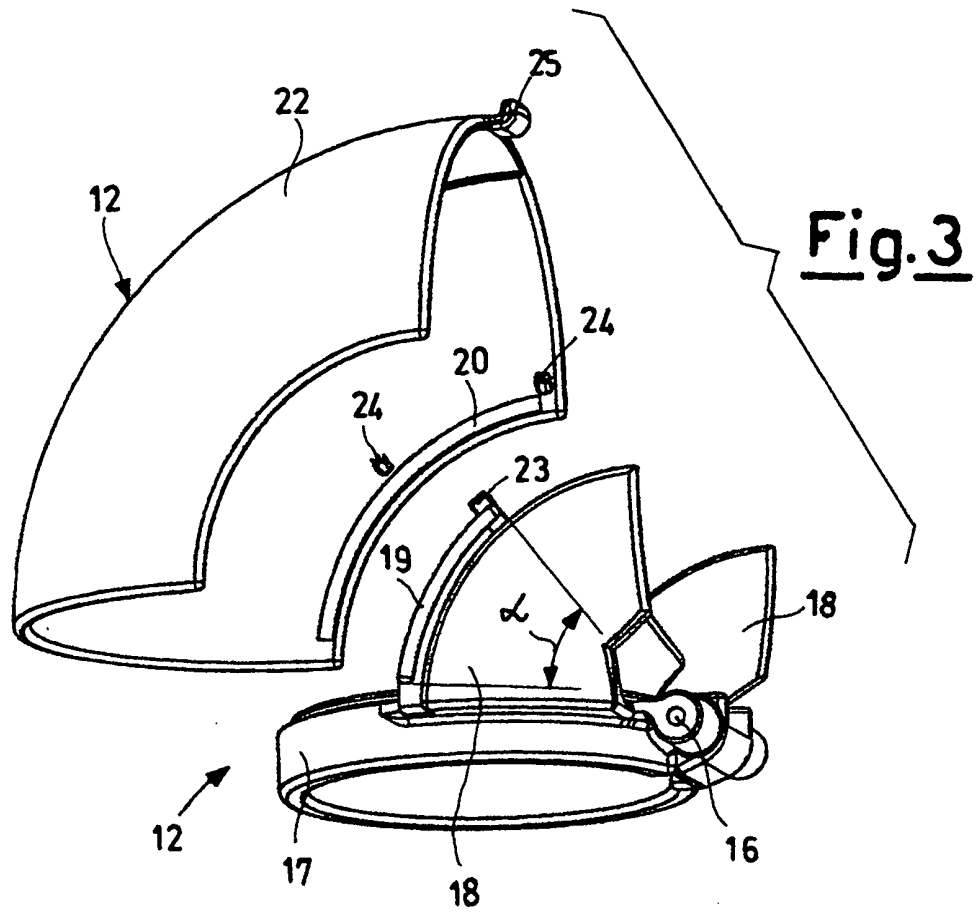


Fig.5a

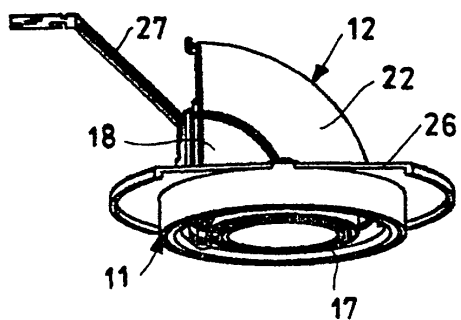


Fig.5b

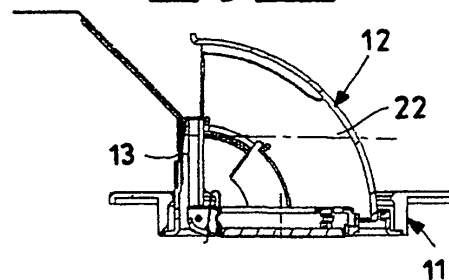


Fig.6a

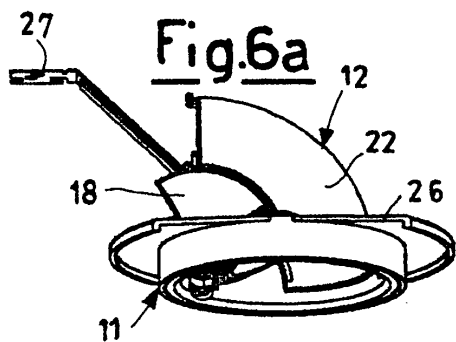


Fig.6b

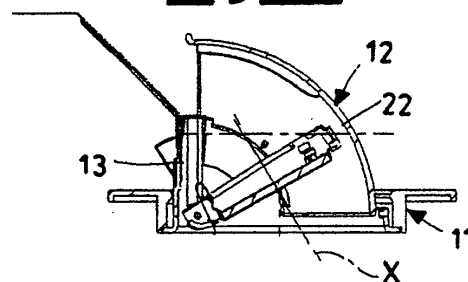


Fig.7a

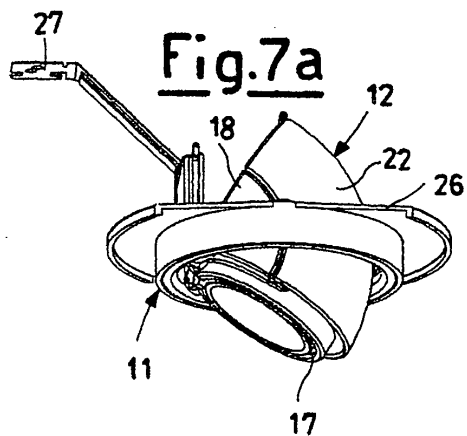


Fig.7b

