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(54) Base for light fittings with an elastic element for fixing the lamp socket and the diffuser

(57) The invention is a new base (P) for light fittings comprising a coupling (C) and a lamp socket (S), having a generically ring-shaped elastic element (E) that rests up against said coupling (C) and retains the lamp socket (S) and a diffuser (D). The elastic element (E) is composed of a strip of flexible metal folded into a polygonal shape and having one end (E1) folded towards the inside of its polygonal shape; one of the two edges of the strip forming the elastic element (E) is segmented into several parts (E2) and each part (E2) is bent towards the inside of the ring formed by the elastic element (E). The coupling (C) has a ring-shaped groove (Cs) on the outside, in which there is an opening (Ca) communicating with the inside of the cylindrical coupling (C). The elastic element (E) is inserted in the groove (Cs) of the coupling (C), on the inside of the diffuser (D), so that its folded end (E1) fits into the opening (Ca) in the coupling (C) and thereby retains the lamp socket (S), and so that each part (E2) of its segmented edge comes up against the rim (Cb) of the groove near to the end (Cl) where the lamp socket (S) is inserted.

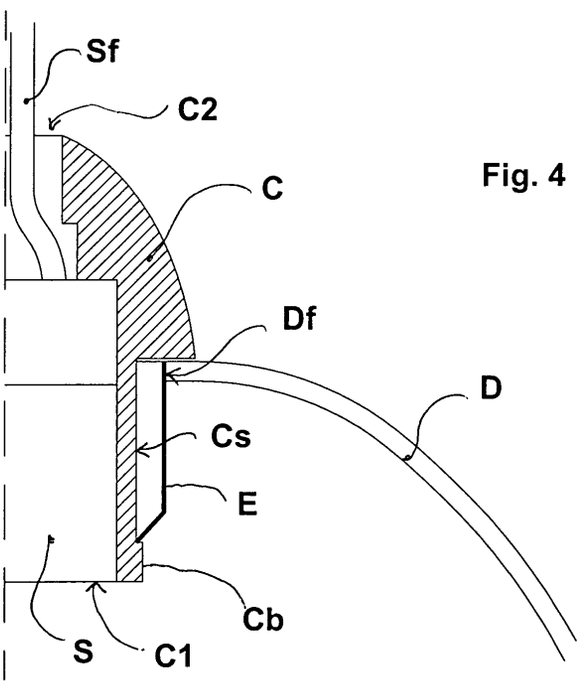

Fig. 4

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Description

[0001] This patent pertains to bases for pendant light fittings, luminaires, ceiling lamps and other such devices, and particularly it concerns a new base with an elastic element for fixing the diffuser and the lamp socket.

[0002] Pendant light fittings, luminaires, ceiling lamps, etc., are fitted with a diffuser that is held in place by the structure of the pendant light fitting, luminaire or ceiling lamp, or by the base.

[0003] Pendant light fittings whose diffuser is held in place by the fitting's structure require specific components, e.g. screws, etc., for fixing the diffuser and consequently involve having to manufacture and install several elements and parts.

[0004] Bases that also hold the diffuser, which generally have a ring-shaped raised rim on the outside, a thread and a fixing ring nut, are well known. The diffuser is held and locked in place between the ring-shaped rim and the aforesaid ring nut screwed onto the base.

[0005] Such bases with screw-on ring nuts are used only for light bulbs with an Edison screw-type coupling and are unsuitable for light bulbs with a bayonet coupling because of the small dimensions of the base.

[0006] For light bulbs with a bayonet coupling, the diffuser is consequently held in place by the structure of the pendant light fitting, luminaire or ceiling lamp, by means of additional parts and screws. Bases for bayonet cap bulbs are made of ceramic material and are attached to the base with screws that require the use of screwdrivers or other specific utensils.

[0007] Moreover, fixing the diffuser by means of the screw-on ring nut has to be done with great care in order to ensure the diffuser is firmly locked in place without running the risk of damaging it.

[0008] To overcome all the above-mentioned drawbacks, a new base for light fittings has been designed and developed that is complete with an elastic element for locking the coupling, the lamp socket and the diffuser.

[0009] One of the purposes of the new base is to enable a quick, safe attachment of the diffuser without using other parts and without the need for specific tools or utensils.

[0010] Another purpose of the new base is to enable the attachment of the lamp socket without the aid of specific tools or utensils.

[0011] Another purpose of the new base is to hold both the diffuser and the lamp socket with a single fixing element.

[0012] Another purpose of the new base is to simultaneously fix the diffuser and the lamp socket in place without the aid of specific tools or equipment.

[0013] These and other, direct and complementary purposes, are achieved by the new base for light fittings comprising a coupling, a lamp socket and an elastic locking element.

[0014] The preferably cylindrical coupling has a ring-shaped groove on the outside with an opening communicating with the inside of the coupling.

[0015] Said opening is the same height as the ring-shaped groove and extends along the circumference of the groove over a length sufficient to enable access to the elastic element.

[0016] The cylindrical coupling contains the lamp socket comprising an element having a generically T-shaped cross section and complete with suitable holes and/or fastenings for inserting the bulb.

[0017] The elastic element is composed of a strip of flexible metal folded into a polygon, with one end folded back towards the inside of the polygon. One of the two edges of the elastic element is segmented and all its parts are bent towards the inside of the elastic element.

[0018] The lamp socket is inserted in the coupling, while the diffuser is attached to the outside of said coupling in line with the rim of the ring-shaped groove; the elastic element is attached to said ring-shaped groove with its folded end housed in the opening in the cylindrical coupling, so as to keep the diffuser in position and hold the lamp socket.

[0019] The characteristics of the new base with its elastic locking element will be better clarified by the description that follows, with reference to the attached drawings, as an illustrative and not restrictive example.

[0020] Figure 1 shows a side view of the new base (P), Figure 2 is a horizontal cross section of the new base (P), while Figures 2a, 2b and 2c show the coupling (C), the lamp socket (S) and the elastic element (E).

[0021] Figure 3 shows an axonometric view of the elastic element (E).

[0022] Figure 4 is a vertical cross section of the new base (P) showing the lamp socket (S) and the diffuser (D).

[0023] The new base (P) comprises a cylindrical coupling (C), a lamp socket (S) and an elastic element (E).

[0024] The cylindrical coupling (C) has a generically tubular form having one open end (C1) for inserting the lamp socket (S) and the other end (C2) shaped to attach the new base (P) to the structure of the pendant light fitting, luminaire or ceiling lamp and to allow for the passage of the power supply wires (Sf).

[0025] On the outside of the coupling (C), in the vicinity of the end (C1) for inserting the lamp socket (S), there is a ring-shaped groove (Cs).

[0026] The rim (Cb) formed between said ring-shaped groove (Cs) and the end (C1) where the lamp socket (S) is inserted has a narrower diameter than the rest of the cylindrical coupling (C) to allow for the insertion of the diffuser (D).

[0027] Along the circumference of said ring-shaped groove (Cs) there is an opening (Ca) communicating with the inside of the cylindrical coupling (C). This opening (Ca) extends over the entire height of the groove (Cs) and over a length sufficient to allow for the insertion of the folded part (E1) of the elastic element (E).

[0028] The lamp socket (S) comprises an element,

preferably made of ceramic or thermoplastic material, complete with the necessary bulb fastenings (S1). The power supply wires (Sf) can be connected at the opposite end.

[0029] The lamp socket (S) is inserted in the cylindrical coupling (C) so that the bulb fastenings (S1) are facing towards the outside of the cylindrical coupling (C).

[0030] The elastic element (E) is composed of a strip of flexible metal, preferably harmonic steel, folded several times in order to create an open ring with a polygonal, e.g. hexagonal or pentagonal, cross section.

[0031] One of the ends (E1) of the elastic element (E) is folded towards the inside of the ring and one of the edges is segmented into several parts (E2) and each part (E2) is bent towards the inside of the ring formed by the elastic element (E).

[0032] This elastic element (E) is attached to the cylindrical coupling (C) so as to fit into the ring-shaped groove (Cs) and simultaneously retain both the diffuser (D) and the lamp socket (S).

[0033] The diffuser (D) has a hole (Df) whose diameter is wider than the bottom end (Cb), but narrower than the part (Cb) of the cylindrical coupling (C) at the opposite end.

[0034] The elastic element (E) fits into the groove (Cs) in the cylindrical coupling (C), on the inside of the diffuser (D), so that its folded end (E1) fits inside the opening (Ca) in the coupling (C) and holds the lamp socket (S) in such a manner that each part of its segmented edge (E2) rests against the rim (Cb) of the coupling (C).

[0035] To be more precise, the elastic element (E) fits inside the hole (Df) in the diffuser (D), pressing against the edge of said hole (Df) so as to exert sufficient friction to retain the diffuser (D).

[0036] The base (P) as described above offers numerous advantages and innovative features.

[0037] The new base (P) does not need screws or additional parts for fixing the diffuser (D) and/or lamp socket (S) in place.

[0038] The new base (P) does not need tools or utensils for fixing the diffuser (D) and/or lamp socket (S) in place.

[0039] The new base (P) enables the removal of the diffuser (D) without the aid of specific tools or utensils, simply by contracting the elastic element (E) and sliding out the diffuser (D).

[0040] The new base (P) enables the removal of the lamp socket (S), after removing the diffuser (D), without the aid of specific tools or utensils, simply by expanding the elastic element (E) and sliding the socket out of the cylindrical coupling (C).

[0041] Therefore, with reference to the previous description and to the attached drawings, the following claims are put forth.

Claims

1. Base (P) for light fittings comprising a coupling (C) and a lamp socket (S), **characterized in that** it comprises a generically ring-shaped elastic element (E) placed around said coupling (C) that fits against said coupling (C) and retains the lamp socket (S) and a diffuser (D).

2. Base (P) according to claim 1, **characterized in that** said coupling (C) is complete with a side opening (Ca) suitable for enabling contact between the elastic element (E) and the lamp socket (S).

3. Base (P) according to claims 1 and 2, **characterized in that** the elastic element (E) is composed of a strip of flexible metal bent into a polygonal shape and having one end (E1) folded back towards the inside of the polygonal shape, and wherein one of the two edges of the strip forming the elastic element (E) is segmented into several parts (E2), each part (E2) being bent towards the inside of the ring formed by the elastic element (E).

4. Base (P) according to claims 1, 2 and 3, **characterized in that** the cylindrical coupling (C) has a ring-shaped groove (Cs) on the outside, in which there is an opening (Ca) communicating with the inside of said cylindrical coupling (C), and wherein the elastic element (E) fits into the groove (Cs) on the coupling (C), on the inside of the diffuser (D), so that its folded end (E1) fits into the opening (Ca) in the coupling (C) and thereby retains the lamp socket (S), and so that each part (E2) of its segmented edge comes up against the rim (Cb) of the groove near to the end (C1) where the lamp socket (S) is inserted.

5. Base (P) according to claims 1, 2, 3 and 4, **characterized in that** the unsegmented edge of the elastic element (E) fits inside the hole (Df) in the diffuser (D), pressing against the rim of said hole (Df) so as to exert sufficient friction to retain the diffuser (D).

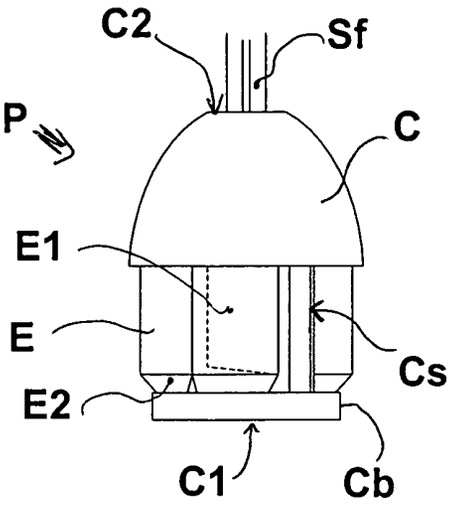

Fig. 1

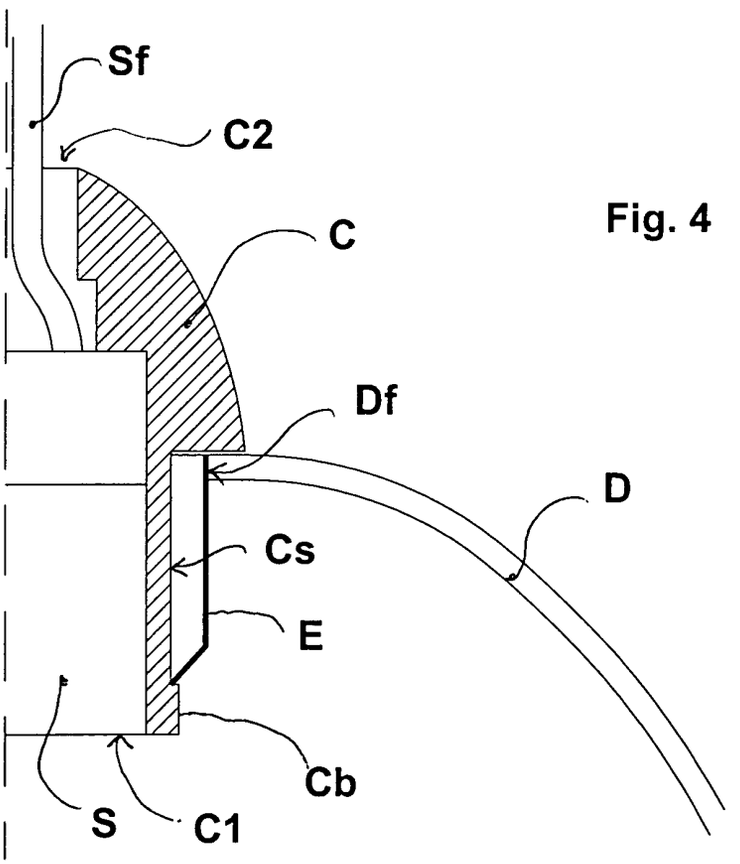

Fig. 4

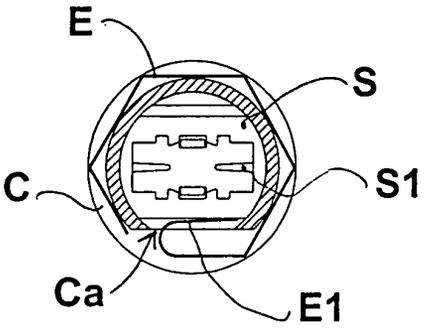

Fig. 2

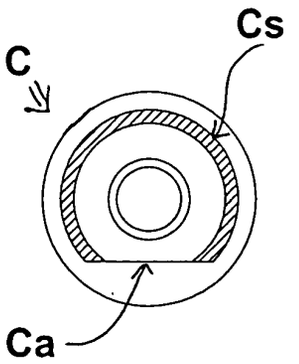

Fig. 2a

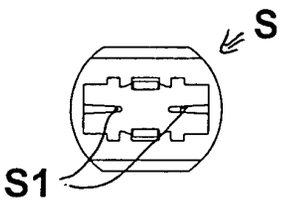

Fig. 2b

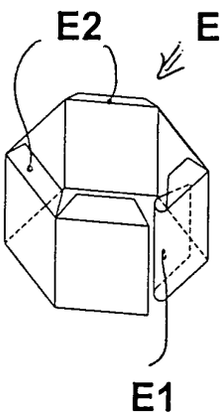

Fig. 3

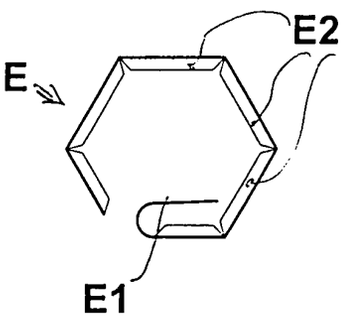

Fig. 2c