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(54) **Lamp with temperature dependent, movable elements**

Lampe mit temperaturabhängigen, beweglichen Elementen

Lampe avec des éléments mobiles et dépendants de la température

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(73) Proprietor: **H. F. K. Engineering**
3741 LM Baarn (NL)

(72) Inventor: **Klein Woolthuis, Harmen**
3741 LM Baarn (NL)

(74) Representative: **Kupecz, Arpad**
Octrooibureau Los en Stigter B.V.
Weteringschans 96
1017 XS Amsterdam (NL)

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Description

[0001] The present invention relates to a lamp. More specifically, the invention relates to a lamp for positioning around a light bulb or the like as specified in the preamble of claim 1.

[0002] In the art, various lamps or lampshades are known that are placed around a light bulb. These lampshades are static. From the American patent US 2,561,217 a lamp is known, comprised of a thermally deformable member that is placed around a light bulb. Its effect is such that when the light bulb produces heat, the thermally deformable member bends away from the light bulb, producing the effect of a so-called simulated flower with thermostatic action.

[0003] The drawback of this known lamp is that the entire construction surrounding the bulb bends. This produces a wilted appearance. Since each part of the separate elements must be able to absorb the heat from a light bulb immediately and completely, the appearance is very artificial.

[0004] A drawback of this known lamp is therefore that a poor effect is obtained.

[0005] DE 195 48 187 A1 describes a lamp comprising the features of the preamble of the present claim 1. However, the elements are connected to the frame part by means of a straight deformable element. If the elements are to mimic petals, this provides an un-natural movement of the elements.

[0006] JP 17-262812 describes a lamp similar to DE 195 48 187 A1. The elements according to JP 17-262812 are connected to a frame part by means of a spring and tape. This is an unwanted complicated structure.

[0007] Furthermore, FR 2 474 644 relates to a similar lamp, that very much resembles the lamp according to DE 195 48 187 A1. This lamp has a complicated structure of the deformable part, that necessitates a large fitting.

[0008] The object of the invention is to provide an improved lamp.

[0009] The object of the invention is in particular to provide a lamp with which a simple, quick and even reaction is obtained after the light bulb is switched on or off.

[0010] A particular object of the invention is to provide a lamp, with which a technically correct opening and closing of a flower can be created.

[0011] In order to achieve at least one of the above mentioned objectives the invention provides a lamp for positioning around a light bulb, comprising the features identified in claim 1. Since according to the invention the elements bend through a deformable member that has at least two windings the elements will open evenly. In the closed position the base of the elements that is connected to the deformable member can be positioned nearby the lightbuld whereas in the open position the base is positioned at a position away from the light bulb, providing a very faithful representation. Hence, a very nature-like movement is obtained.

[0012] Since the elements are preferably situated substantially near the frame part at the fitting of the lamp, a very faithful representation of the opening and closing of a real flower is obtained.

[0013] Hereinafter reference will be made mainly to a light bulb. However, the scope of the invention extends also to other devices, which in each case radiate heat or possibly emit light. Instead of a light bulb, it is therefore possible to use a device emitting infrared radiation to cause the deformable member to undergo deformation through absorption of external heat radiation.

[0014] The deformable member may, for example, be a bimetal member. Hereinafter, reference will be made mainly to a bimetal member, while other deforming components are included also. The invention is, however, in no way limited to the use of only a bimetal member. The term "bimetal member" to be used hereinafter also covers other thermally deformable members, materials or elements.

[0015] The fact that the bimetal member connecting each element with the frame part is situated close to the lamp, where it remains as well, causes the lamp to work effectively. For this reason, possible temperature fluctuations in the air will have little or no influence on the opening and/or closing of the lamp.

[0016] The invention provides in particular the advantage that the bimetal members are thus at all times situated close to the light bulb.

[0017] Within the scope of the invention the term bimetal member refers to any element undergoing deformation due to a temperature change. This deformation must of course be such that when applied in the lamp according to the invention, changes in temperature will cause the movement of the elements.

[0018] According to a preferred embodiment, the frame part is placed close to the fitting of a light bulb. The frame part may, for example, be placed on the fitting before inserting the light bulb into the fitting. The lamp is thus suitably positioned.

[0019] According to a further preferred embodiment, the elements are shaped like petals and are in the first position folded around the light bulb like a flower bud. When the lamp is switched off, only an artificial flower bud will be visible. However, by using suitable materials such a lamp can be made to look like a real flower.

[0020] It is especially preferred for the elements to be shaped like the petals of a tulip, a lily, or a lotus flower. Because of their shape, such petals are very suitable for covering a light bulb. Elements of a different shape are of course also suitable.

[0021] It is further preferred for a first end of the bimetal member to be connected with a fastening member of the frame part, wherein the bimetal member is also wound around the fastening member, and a second end thereof is connected with an element. Due to this winding the element's movement is even and more stable.

[0022] In order to limit the maximum deflection of the bimetal member at a change in temperature, and thereby the maximum deflection of the elements, the frame part

is provided with a stop. For example, when the temperature rises, the second end of the bimetal member may come to rest against this stop, or the element in the form of, for example, a petal, may come to rest against this stop. In this way the lamp will only be able to open to a maximum when the light bulb is switched on.

[0023] It is also preferred for the bimetal member to have at least four windings. By providing a minimum of four windings windings, the elements will open still more evenly.

[0024] According to a further embodiment, the elements may in the unfolded condition form a reflector that converges the light and/or the heat from the light bulb or the like into a focussed beam. By causing the elements to bend in a predetermined manner, a desired light or heat pattern may be formed.

[0025] The invention generally affords the advantage that while a light bulb or the like is not in use, it is protected by the elements.

[0026] Hereinafter the invention will be further described with reference to a drawing.

[0027] Figure 1 shows a perspective view of the lamp according to the invention in a closed position.

[0028] Figure 2 shows a perspective view of the lamp according to Figure 1 in an open position.

[0029] Figure 3 shows a top view of the frame part with one connected element of the lamp according to the invention.

[0030] Figure 4 shows a side elevation of the bimetal member in the direction of line A-A in Figure 3.

[0031] Figure 5 shows a perspective view of a portion of the frame part with a bimetal member.

[0032] In the drawing, Figure 1 shows a lamp 1 according to the invention. The lamp 1 is folded around a light bulb (not shown) and comprises a frame part 2, bimetal members 3 and elements 4. These elements 4 are shaped like petals. They partly overlap and in that way cover the light bulb (not shown) in a suitable manner.

[0033] When switched on, the light bulb will produce heat. This will cause the bimetal members 3 to deform in such a manner that the elements 4 are moved away from the light bulb. This is shown in Figure 2. The elements 4 are now placed around a light bulb 5 like an open flower. It can be clearly seen that the bimetal members 3 are fixed in the frame part 2. The positioning of the bimetal member 3 in the frame part 2 is clearly illustrated by showing the indicated positions (6, 7) from which, respectively, only an element is removed, and from which an element and a bimetal member are removed.

[0034] Figure 3 shows a top view of the frame part 2. The frame part 2 may be positioned with its circular opening 8 over a light bulb fitting. The threaded part of the light bulb (not shown) may then be inserted through the opening 8 and screwed into the fitting. The frame part 2 is then suitably connected with the light bulb.

[0035] Figure 2 shows an embodiment wherein twelve elements can be attached to the frame part 2. Only one element 4 is shown. By means of a bimetal member 3, this element 4 is connected with fastening members 9, suitably embodied for this purpose. One end of each fastening member 9 is attached to the circular portion of the frame part 2.

[0036] Figure 4 shows a cross section in the direction of the arrows A-A in Figure 3. The bimetal member 3 is attached to the frame part 2. This attachment is provided with a central fastening ridge 10 (see Figure 3). The bimetal member 3 is subsequently wound several times around said fastening ridge 10, through the openings 12, 13 in the fastening member 9. When a light bulb emits heat to the bimetal member 3, the same will move in the direction of the arrow B. Eventually, the second end 14 of the bimetal member 3 will come to rest against the stop 11 of the member 9. This determines the maximum deflection of the bimetal member 3, and accordingly of the element 4.

[0037] Figure 5 finally, shows a perspective view of a portion of frame part 2 according to the invention. The bimetal member 3, the fastening ridge 10 via which the bimetal is connected with the frame part 2, and the stop 11, are clearly visible.

[0038] The invention is not limited to the above-described embodiment. Especially a person skilled in the art is able to use a different material than a bimetal to initiate the change of the lamp's form when the light bulb is switched on.

[0039] The invention is limited by the appended claims only.

Claims

1. A lamp (1) for positioning around a light bulb (5) or the like, comprising elements (4) that in a first position are folded around the light bulb and in a second position are moved away from the light bulb, wherein at one of their ends, the elements (4) are connected with a frame part (2), of the lamp (1) by means of a deformable member (3) such that at a first temperature, the elements are in the first position and at a second, higher temperature, the elements are in the second position **characterized in that** the deformable member (3) has at least two windings.

2. A lamp (1) according to claim 1, wherein the frame part (2) is situated close to the light bulb fitting.

3. A lamp (1) according to claim 1 or 2, wherein the elements (4) are shaped like petals and are in the first position folded around the light bulb (5) like a flower bud.

4. A lamp (1) according to claim 3, wherein the elements (4) are shaped like the petals of tulips, lilies, or lotus flowers.

5. A lamp (1) according to claims 1-4, wherein the first

end of the deformable member (3) is connected with a fastening member (10) of the frame part (2), wherein it is also wound around the fastening member, and a second end thereof is connected with an element (4).

6. A lamp (1) according to claim 5, wherein the frame part (2) is provided with a stop (11) in order to maximise the deflection of the deformable member (3) at a change in temperature.

7. A lamp (1) according to claim 6, wherein the deformable member (3) has at least four windings.

8. A lamp (1) according to at least one of the preceding claims, wherein the deformable member (3) is a bimetal element.

9. A lamp (1) according to at least one of the preceding claims, wherein the elements (4) form a reflector, reflecting the light and/or the heat from the light bulb (5) or the like.

Patentansprüche

1. Lampe (1) zur Positionierung rund um eine Glühlampe (5) oder dergleichen, bestehend aus Gliedern (4), die in einer ersten Stellung rund um die Glühlampe gefaltet sind und in einer zweiten Stellung von der Glühlampe weg abgespreizt sind, wobei an einem ihrer Endteile die Glieder (4) mittels eines verformbaren Elements (3) mit einem Rahmenteil (2) der Lampe (1) so verbunden sind, dass bei einer ersten Temperatur die Glieder sich in der ersten Stellung befinden, und bei einer zweiten, höheren Temperatur sich die Glieder in der zweiten Stellung befinden, **dadurch gekennzeichnet, dass** das verformbare Element (3) mindestens zwei Wicklungen aufweist.

2. Lampe (1) nach Anspruch 1, **dadurch gekennzeichnet, dass** der Rahmenteil (2) sich dicht bei der Fassung der Glühlampe befindet.

3. Lampe (1) nach Anspruch 1 oder 2, **dadurch gekennzeichnet, dass** die Glieder (4) die Form von Blütenblättern haben und in der ersten Stellung wie eine Blütenknospe rund um die Glühlampe (5) gefaltet sind.

4. Lampe (1) nach Anspruch 3, **dadurch gekennzeichnet, dass** die Glieder (4) die Form der Blütenblätter von Tulpen, Lilien oder Lotusblüten haben.

5. Lampe (1) nach Anspruch 1 bis 4, **dadurch gekennzeichnet, dass** das erste Endstück des verformbaren Elements (3) mit einem Befestigungselement (10) des Rahmenteils (2) verbunden ist, wobei es außerdem um das Befestigungselement gewickelt ist, und ein zweites Endstück davon mit einem Glied (4) verbunden ist.

6. Lampe (1) nach Anspruch 5, **dadurch gekennzeichnet, dass** der Rahmenteil (2) mit einem Anschlag (11) versehen ist, wodurch die Biegung des verformbaren Elements (3) bei einer Veränderung der Temperatur ihr Maximum erreicht.

7. Lampe (1) nach Anspruch 6, **dadurch gekennzeichnet, dass** das verformbare Element (3) mindestens vier Wicklungen hat.

8. Lampe (1) nach einem oder mehreren der Ansprüche 1 bis 7, **dadurch gekennzeichnet, dass** das verformbare Element (3) ein Bimetallelement ist.

9. Lampe (1) nach einem oder mehreren der Ansprüche 1 bis 8, wobei die Glieder einen Reflektor bilden, der das Licht und/oder die Wärme von der Glühlampe (5) oder dergleichen reflektiert.

Revendications

1. Lampe (1) destinée à être positionnée autour d'une ampoule d'éclairage (5) ou analogue, comportant des éléments (4) qui, dans une première position, sont pliés autour de l'ampoule d'éclairage et, dans une seconde position, sont éloignés de l'ampoule d'éclairage, dans laquelle, à l'une de leurs extrémités, les éléments (4) sont reliés à une partie de bâti (2) de la lampe (1) au moyen d'un élément déformable (3), d'une manière telle qu'à une première température, les éléments se trouvent dans la première position et, à une seconde température, plus élevée, les éléments se trouvent dans la seconde position, **caractérisée en ce que** l'élément déformable (3) comporte au moins deux enroulements.

2. Lampe (1) selon la revendication 1, dans laquelle la partie de bâti (2) est située à proximité de la monture de l'ampoule d'éclairage.

3. Lampe (1) selon la revendication 1 ou 2, dans laquelle les éléments (4) sont d'une configuration analogue à des pétales et sont pliés, dans la première position, autour de l'ampoule d'éclairage (5) à la façon d'un bouton de fleur.

4. Lampe (1) selon la revendication 3, dans laquelle les éléments (4) sont d'une configuration analogue aux pétales de tulipes, de lis, ou de fleurs de lotus.

5. Lampe (1) selon les revendications 1 à 4, dans laquelle la première extrémité de l'élément déformable (3) est reliée à un élément de fixation (10) de la partie

de bâti (2), où il est également enroulé autour de l'élément de fixation, et une seconde extrémité en est reliée à un élément (4).

6. Lampe (1) selon la revendication 5, dans laquelle la partie de bâti (2) est pourvue d'une butée (11) pour maximiser la déformation de l'élément déformable (3) lors d'une variation de la température.

7. Lampe (1) selon la revendication 6, dans laquelle l'élément déformable (3) comporte au moins quatre enroulements.

8. Lampe (1) selon au moins l'une des revendications précédentes, dans laquelle l'élément déformable (3) est un élément bimétallique.

9. Lampe (1) selon au moins l'une des revendications précédentes, dans laquelle les éléments (4) forment un réflecteur, réfléchissant la lumière et/ou la chaleur provenant de l'ampoule d'éclairage (5) ou analogue.

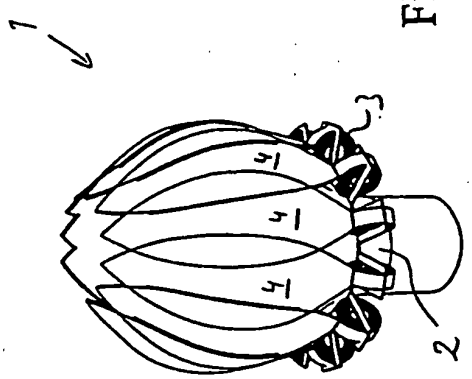


Fig. 1

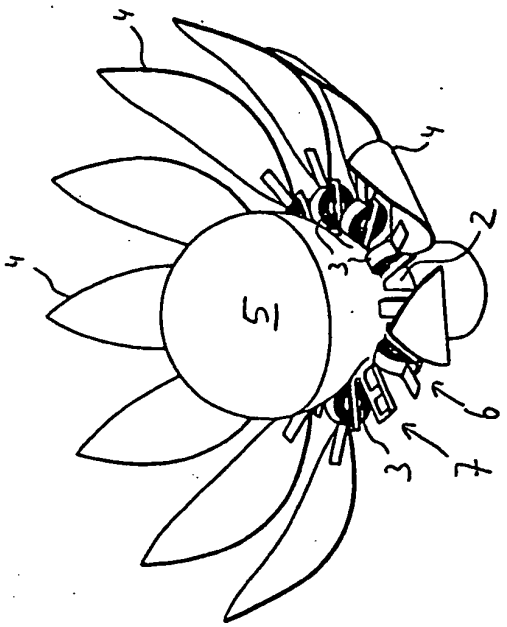


Fig. 2

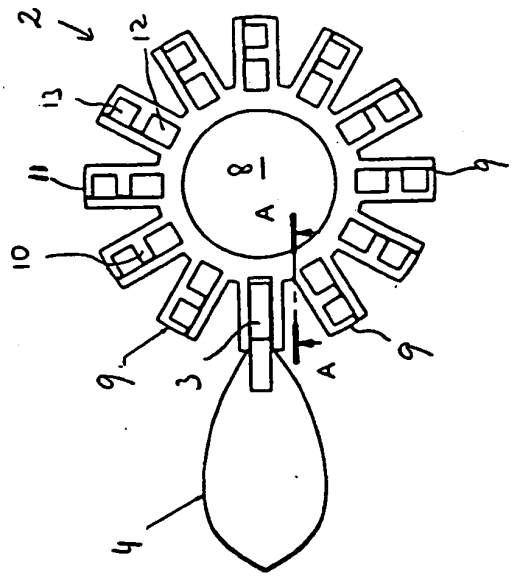


Fig. 3

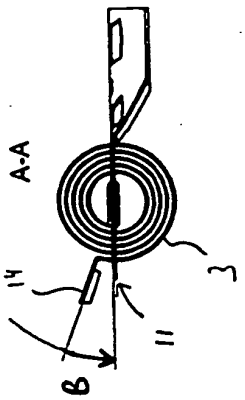


Fig. 4

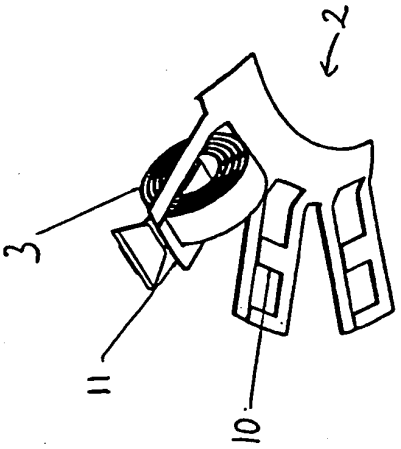


Fig. 5

REFERENCES CITED IN THE DESCRIPTION

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