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ELECTRIC LAMP

This invention relates to an electric lamp which includes a releasable latching mechanism to fasten a transparent cover to a base.

Releasable latching mechanisms are well known and are generally used to fasten two members of an article, for example a sliding door to its frame. In such a device an elongate rigid arm from one member engages in a corresponding recess of the other member to releasably hold the articles together. The arm has a laterally extending protrusion at its engaging end which is adapted to engage an inner surface of the recess. Preferably the protrusion has a bevelled edge to facilitate insertion of the arm into the recess. The recess must be of larger dimensions than the arm, since the arm must be movable within the recess to disengage the protrusion from the inner surface of the recess in order to separate the members. A problem arises with this type of mechanism in that the latching arrangement is relatively easy to disengage, and so the articles can be separated with considerable ease at any time. It is not always desirable to be

able to separate latched articles with such ease and
in fact in some instances it is desirable to lock the
elongate arm within the recess. Prior to the present
invention this has been carried out by complex locking
5 mechanisms which lock the arm in position in the
recess.

According to the present invention there is
provided an electric lamp comprising:

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a base including an electric plug and a
light fitting for receiving a light bulb;

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a transparent cover for protecting the light
bulb;

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a latching mechanism for latching the cover
to the base, the mechanism including a resilient
formation on the cover, an aperture in the base of
size sufficient to permit part of the resilient
formation to be received therein when pressure is
applied to the formation to bend it theretowards, the
resiliency of the formation allowing the part received
in the aperture to abut against part of the base

defined by the aperture when the pressure on the formation is released, to thereby latching the cover to the base;

5 characterised in that a tab is provided in the remaining space of the aperture to substantially prevent movement of the resilient formation when the cover is in its latched position relative to the base, to thereby prevent unlatching of the resilient
10 formation and hence removal of the transparent cover from the base.

The invention will now be described with reference to the accompanying drawings in which:

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Figure 1 is a schemtaic perspective view of a base of an electric lamp in accordance with the present invention;

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Figure 2 is a schematic perspective view of a cover for the base;

Figure 3 is a front elevation of the partially closed end of the cover;

5 Figure 4 is a section on the line III - III of Figure 3;

Figure 5 is a perspective view of a tab used in a lamp in accordance with the present invention;

10 Figure 6 is a schematic perspective view of the base and cover secured together;

Figure 7 is a section on the plane X-X'-X' of Figure 6;

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Figure 8 is a perspective view showing the base integrally moulded with an electric lamp, and

20 Figure 9 is a perspective view of an electric lamp which is assembled using the principles of the present invention.

Referring to the drawings, a base 1 of an electric lamp comprises a generally rectangular first limb 2 and a second limb 3. The second limb 3 has a first portion shown at 3A and a second portion shown at 3B. The opposed edges of the first portion 3A are substantially parallel to each other, and the opposed edges of the second portion 3B taper slightly towards each other. The second limb 3 is provided at one end of the first limb 2, and the base is generally L-shaped in longitudinal section.

A hole 4 is provided on the first limb 2 of the base 1 and towards its open end. A threaded bore 5 is located near to the hole 4.

The second limb 3 has two projections 5A at its narrow end, extending in the direction of the first limb 2 and towards its open end. Between the two projections 5A on the second limb 3 there is a hole 6.

The base 1 is integrally moulded from a thermoplastic or other suitable material. The base 1 is adapted to receive a cover 7. The cover 7 has a rectangular wall 8 extending between the edges of two opposed walls 9 and 10. The opposed walls 9, 10 each have a first portion 9A, 10A and a second portion 9B, 10B. The first portions 9A, 10A of walls 9 and 10 are substantially parallel to each other and the second portions 9B, 10B taper slightly towards each other and meet with the rectangular wall 8 of the cover 7. The cover 7 is partially closed at one end by end portions 11 and a resilient formation in the form of an elongate arm which is set back from and adjacent to the end portions 11.

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The formation 12 has a relatively wide portion 13 and a relatively narrow portion 14. At one end of the narrow portion 14 is a protruding portion 15 with a bevelled edge 16 to facilitate insertion of the arm 12 into the hole 4 during construction.

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A protrusion 17 extends from the open end of rectangular wall 8.

Preferably the cover 7 is integrally moulded from a resilient thermoplastic material, but it may be constructed from other suitable materials.

5 A tab 20 is also provided which has a generally rectangular base 21 with a wall 24 located at one end therefrom. The wall 24 is substantially perpendicular to the base 21. A centrally located hole 23 is provided in the base 21 and two generally
10 rectangular wing portions 22 extend from the wall 24 in the direction of the base 21 towards the hole 23. The tab 20 is generally L-shaped in longitudinal section.

15 The cover 7 and base 1 are fitted together using the following construction procedure to form a box-like structure (see Figure 7). The cover 7 and base 1 are positioned adjacent to one another with the extending arm 12 opposite the hole 4, and the
20 protrusion 17 being located near to the hole 6. The closed end of the cover 7 is slightly tilted away from the upper end of the base 1 to allow the protrusion 17 to enter the hole 6 which would otherwise be prevented as movement of the narrow portion 12 of arm 12 will be

hindered by the edge of the base 1 directly above the hole 4. The protrusion 17 is guided into the hole 6 of the end portion 3 of the base 1 by the extending projections 5A. Pressure is applied to the arm 12 to bend it towards the open end of the cover 7, and arm 12 is inserted into the hole 4. This insertion is facilitated by the bevelled edge 16 of protrusion 15 of the arm 12. The pressure on the arm 12 is released and its resilience causes the protruding portion 15 to abut against that part of the base directly above the hole 4.

The cover 7 and base 1 are now fitted together to form a box-like structure and can only be separated by reversing the construction procedure.

In order to secure this fitting the tab 20 is required. Each of the wing portions 22 of the tab 20 are inserted into the hole 4 below the arm 12, the wings 22 being dimensioned so as to fit snugly in that part of the hole not occupied by the arm 12. The hole 23 of the tab 20 is adapted to be aligned with the threaded bore 5 of the base 1. Once the tab 20 is in position it is held there by passing a screw 30

through the hole 23 of the tab 20 and then engaging the screw 30 with the co-operating threaded bore 5.

5 The cover 7 is now firmly secured to the base 1 and can not be separated unless the tab 20 is removed from the base 1 and the construction procedure reversed. Alternatively the tab 20 can be adapted to be fastened to the cover 7 in a similar manner to secure the cover 7 to the base 1.

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More details of the electric lamp are shown in Figures 8 and 9. The base 1 is integrally moulded with an electric plug and has a light fitting 40 extending into the end portion 3. A light bulb 42 fits into light fitting 40 and is switched on when the plug is connected to a mains supply. The cover 7 is transparent to emit light from the bulb. The cover 7 is fitted to the base 1 in the above-described manner and once assembled protects the bulb.

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In an alternative embodiment applying the principles of the present invention the base can be secured to a surface by bolts or the like passing through the end portion 3 into the surface.

5 Alternatively the rectangular limb 2 of the base may be secured to a by passing bolts or the like through the limb 2 into the surface, provided that the surface has a hole corresponding to the hole 4 and bore 5 of the base 1 to enable the tab 20 and screw 30 to be
10 inserted into the base, thereby making the structure relatively tamper proof.

The spacing between the arm 12 and the end portions 11 of the cover 7 has two functions. Firstly
15 it facilitates relatively easy movement of the arm 12 for insertion and removal of the arm 12 from the hole 4 in the base, and secondly it prevents a build-up of heat within the box-like structure when the light is
switched on, by allowing the heat created by the light
20 to dissipate from the structure by convection.



CLAIMS:

1. An electric lamp comprising:

a base including an electric plug and a light fitting for receiving a light bulb;

a transparent cover for protecting the light bulb;

a latching mechanism for latching the cover to the base, the mechanism including a resilient formation on the cover, an aperture in the base of size sufficient to permit part of the resilient formation to be received therein when pressure is applied to the formation to bend it theretowards, the resiliency of the formation allowing the part received in the aperture to abut against part of the base defined by the aperture when the pressure on the formation is released, to thereby latch the cover to the base;

characterized in that a tab is provided in the remaining space of the aperture to substantially prevent movement of the resilient formation when the cover is in its latched position relative to the base, to thereby prevent



unlatching of the resilient formation and hence removal of the transparent cover from the base.

2. An electric lamp according to claim 1 wherein the aperture for receiving the resilient formation is on the same side of the lamp as the electric plug so that the tab and hence the cover cannot be removed when the plug is in an electric socket.

3. An electric lamp according to claim 1 or claim 2 wherein the tab is retained in the aperture by screw means.

4. An electric lamp according to any one of the preceding claims in which the resilient formation on the cover is an elongate arm having a laterally extending protrusion on the end thereof adapted to extend beyond the aperture and lie behind part thereof to latch the cover to the base.

5. An electric lamp according to claim 4 wherein the protrusion has a bevelled edge to facilitate its insertion into said aperture.



6. An electric lamp according to any preceding claim wherein the tab is L-shaped in longitudinal section.

7. An electric lamp according to claim 1 or claim 6 wherein said tab includes a hole for receiving a screw adapted to pass therethrough and engage within a threaded bore located in the base, to secure the tab to the base.

8. An electric lamp substantially as hereinbefore described with reference to and as shown in the accompanying drawings.
