Apparatus for mounting and holding a lamp and battery on a gift package, greeting card or the like. In one embodiment of the invention, the apparatus comprises an elongated rectangular-shaped housing in which the battery and a lamp socket are disposed. A metallic strip disposed on the bottom surface of a recess in the housing engages the battery casing and electrically couples it to the base of a lamp inserted in the socket. In another embodiment of the invention, a planar sheet of flexible material is scored and cut at its center to provide a pair of foldable flaps. A thin sheet of electrically conductive material is disposed over the planar sheet, and adhesive strips are placed on the conductive sheet adjacent the flaps. The flaps are folded so as to form a pair of parallel, triangular-shaped support members between which the battery is disposed. Adhesive strips secure the battery casing to the sheet of material, and a conductive ring or strip of material having a circular aperture for receiving the lamp is disposed over the positive terminal of the battery. When a lamp is inserted in the conductive holder, it engages the metallic sheet of material and the lamp is illuminated.


18 Claims, 12 Drawing Figures
MOUNTING APPARATUS FOR ILLUMINATED GIFT PACKAGES, GREETING CARDS, OR THE LIKE

The present invention relates to a holder for a lamp and battery, and in particular to an apparatus for holding and mounting the lamp and battery on an illuminated gift package, greeting card, ornament or the like.

When selling illuminated gift packages, ornaments, greeting cards and the like, it is preferably to provide a lamp and battery holding and mounting apparatus which may be easily assembled by the customer when the item is to be used. Accordingly, the present invention provides a mounting and holding apparatus for the lamp and battery of the illuminated greeting card, ornament or package, which in one embodiment comprises an elongated rectangular-shaped housing constructed of soft resilient plastic material in which recesses for receiving a cylindrical battery and the lamp are disposed. A metallic threaded socket for the lamp may be disposed in the lamp receiving recess. A strip of electrically conductive metallic material is disposed within the recess provided in the housing so as to engage the casing of the battery and couple the casing electrically to the base of the lamp when the lamp is inserted in the lamp socket. Spring means are provided at the end of the recess which engages the base of the battery and forces the battery towards the lamp so that the positive battery terminal engages the lamp base or the lamp socket and illuminates the lamp. A rectangular-shaped cover is provided for the housing to secure the battery therein.

In another embodiment of the invention, a planar mounting apparatus is disclosed. A flat, rectangular sheet of cardboard or other electrically non-conductive material is scored at its center to provide a pair of flaps which are bendable so as to form a pair of upwardly projecting, triangular-shaped support and contact members. The top surface of the planar members is provided with a thin sheet of electrically conductive metallic material, and a pair of adhesive areas or strips adjacent the flaps for securing the battery to the top surface of the planar sheet between the triangular-shaped members. The lamp is coupled to the positive terminal of the battery by either an annular ring, or flat strip having a circular aperture disposed therein. The ring or strip may be constructed of either conductive or non-conductive material in which latter case the lamp base engages the positive battery terminal. The strip and ring have apertures provided therein which are disposed over the positive battery terminal to couple the lamp to the battery. The lamp is inserted through the ring or aperture in the strip, and is illuminated by the battery when it engages the metallic surface of the planar mounting member.

It is therefore an object of the present invention to provide a mounting and holding apparatus for the battery and lamp of an illuminated ornament, gift package, greeting card or the like which may be easily assembled after purchase when it is ready for use.

It is also an object of the present invention to provide a mounting and holding apparatus for the lamp and battery of an illuminated gift package, or the like, which is simple in design, easy to manufacture, and reliable in its operation.

Other objects and features of the present invention will become apparent from the following detailed description taken in connection with the accompanying drawings. It is to be understood, however, that the drawings are designed for the purposes of illustration only and are not intended as a definition of the limits and scope of the invention.

Referring to the drawings, wherein similar reference numerals denote similar elements throughout the several views:

FIG. 1 is an exploded, perspective view of one embodiment of a mounting and holding apparatus constructed in accordance with the present invention;

FIG. 2 is a cross-sectional side view of the apparatus taken along section 2—2 of FIG. 1;

FIG. 2a is a cross-sectional side view of another mounting and holding apparatus similar to the embodiment illustrated in FIG. 1;

FIG. 3 is a cross-sectional view of the apparatus taken along section 3—3 of FIG. 2a;

FIG. 4 is a perspective view of another embodiment of a mounting and holding apparatus constructed in accordance with the present invention;

FIG. 5 is a perspective view of the apparatus of FIG. 4;

FIG. 6 is a perspective view of the apparatus of FIGS. 4 and 5 showing the lamp and battery in use;

FIG. 7 is a cross-sectional view of the apparatus taken along section 7—7 of FIG. 6;

FIG. 8 is a cross-sectional side view of the apparatus taken along section 8—8 of FIG. 6;

FIG. 9 is a perspective view of another embodiment of a mounting and holding apparatus similar to the embodiment shown in FIG. 4;

FIG. 10 is a perspective view of the apparatus of FIG. 9 showing the lamp and battery in use; and

FIG. 11 is a cross-sectional side view of the apparatus taken along section 11—11 of FIG. 10.

Referring to the drawings, specifically to FIGS. 1—3, there is shown a battery and lamp holding and mounting apparatus, generally denoted as 10, comprising a substantially rectangular-shaped, elongated housing 11 which has an elongated rectangular-shaped opening 12 in its top surface through which a cylindrical battery 13 is inserted into a recess 18 provided inside the housing, and a circular aperture also in its top surface in which the lamp, or a metallic, electrically conductive, threaded lamp socket 14 for receiving the lamp is disposed. Housing 11 is preferably constructed of a resilient soft plastic material, since the width of opening 12 is less than the diameter of cylindrical battery 13, and the housing must be resilient for the battery to be inserted in the recess. A rectangular-shaped cover 15, having a circular aperture 16 provided at one end for disposal over lamp 17, has inner dimensions which are the same as or slightly smaller than the outside dimensions of housing 11. Thus cover 15 fits tightly over the top of the housing. The cover is also preferably constructed of resilient, soft plastic material.

A thin, elongated, electrically conductive strip of metallic material 19 is disposed on the bottom surface of the recess, and extends the entire length thereof. At one end, the strip is bent upwardly so that it engages the bottom surface of battery 13. In the embodiment illustrated in FIG. 2, the end of the strip is material is
bent so as to form an accordion fold, and acts like a spring by engaging the base of battery 13 and applying force longitudinally along its length so that positive terminal 20 engages the base of the lamp or lamp socket 14. In the embodiment illustrated in FIG. 2a, one end of the recess of the housing is provided with a horizontally-disposed spherical or cylindrical shaped member 21 on its inside surface which engages the back of strip 19 adjacent the end of battery 13. The projecting member causes housing 11 to bend slightly, as shown in FIG. 2a, to create a longitudinal force which is exerted on the battery. This force ensures sufficient contact between strip 19, battery 13, terminal 20 and the lamp base or socket 14. Lamp socket 14 may be constructed of any suitable electrically conductive metal, such as brass. The strip of conductive metallic material may be any suitable type, such as silver foil. As noted above, socket 14 is optional and the lamp may be inserted directly into the aperture in the housing. The positive terminal of the battery will then engage the lamp base.

In FIGS. 4–8 another embodiment of the invention is illustrated. A flat sheet of non-conductive material 22, such as cardboard, has a thin sheet of metallic material 23 affixed by adhesive or other suitable means to its top surface. The center of sheet 22 is scored and cut so as to provide an L-shaped slot and flaps 24 in the center portion thereof. The strips are bent so as to form a pair of upwardly extending, triangular-shaped members which provide lateral support for battery 13 when it is disposed on the apparatus and ensure contact between the casing of battery 13, which has no insulating cover, and the lamp. Two areas containing adhesive material 25, which may be double-sided adhesive strips, are provided adjacent flaps 24 for securing the battery to the top surface of sheet 22. Paper or other non-conductive strips 126 may be disposed over the adhesive areas before the mounting apparatus is sold. When the strips are removed, the adhesive is exposed and engages battery 13 so that it is securely affixed to the top surface of the sheet of material. An electrically conductive metallic ring 26, having a circular aperture provided therein is slidably disposed over positive battery terminal 20. Lamp 17 is disposed through ring 26 until it engages metallic material 23. The ring may be constructed of, for example, brass, and the metallic material used may be silver foil. It should be noted, however, that ring 26 may also be constructed of non-conductive material, in which case the force exerted on the battery must be sufficient to ensure that positive terminal 20 contacts the lamp base. A rectangular strap 28, integrally formed with the ring, and preferably constructed of soft, resilient plastic, may be provided to secure ring 26 to the battery and prevent it from accidentally slipping off the positive terminal thereof. This strap, however, is optional, and is not necessary for operation of the apparatus.

In FIGS. 9–11, another embodiment of the invention, similar to that just described, is illustrated. Planar sheet 22' is provided with a conductive metallic sheet 23' and triangular projecting support and contact members formed by flaps 24'. In this embodiment, however, square adhesive areas 25', having a width approximately equal to the diameter of battery 13, are provided adjacent flaps 24' for securing battery 13 to sheet 22'. A planar metallic member 26' having a circular aperture 27' is also provided for receiving lamp 17'. Member 26' also has a circular aperture having a diameter equal to the diameter of positive terminal 20, which is slidably disposed over the positive terminal of the battery. Member 26' may be constructed of any type of suitable conductive material, such as brass, and sheet 23' may be silver foil. As in the previously described embodiment, member 26' may be constructed of non-conductive material, in which case member 26' must be constructed so that the positive terminal of the battery engages the lamp base. Rectangular strap 29, integrally formed with strap 26', may be provided for the same reasons as in the embodiment of FIGS. 4–8, and is also preferably constructed of soft plastic.

To assemble the mounting and holding apparatus of FIGS. 1–3, battery 13 is forced through opening 12 until it slips into recess 18 and engages metallic strip 19, and if lamp socket 14 is included, the lamp socket. Lamp 17 is then slidably disposed in the housing or threaded into lamp socket 14, until it engages metallic strip 19. The lamp is then illuminated by the battery. Cover 15 may then be slidably disposed over housing 11. Adhesive material, such as a double-sided adhesive strip, is then applied to the bottom of housing 11 to affix the apparatus to the greeting card, gift package or ornament.

The embodiment of FIGS. 4–8 is assembled by first removing strips 126 from sheet 22 and folding flaps 24 to form the illustrated triangular support and contact members. Battery 13 is then disposed between flaps 24 and pressed onto sheet 22 against adhesive material 25. Ring 26 is then disposed over the positive terminal of the battery, and lamp 17 inserted therethrough until it engages metallic sheet 23. Strap 28 is also disposed over the battery if included. The lamp is then illuminated. Adhesive material is then affixed to the bottom surface of sheet 22 to affix the apparatus to a gift package, greeting card or the like.

The embodiment in FIGS. 9–11 is assembled in the same manner as the embodiment just described. Battery 13 is pressed onto sheet 22' between flaps 24', and then member 26' is inserted over the positive terminal of the battery and lamp 17 disposed through aperture 27 until it engages sheet 23'. Strap 29 is disposed over the battery if included. Adhesive material or double-sided strips are then affixed to the bottom surface of sheet 22' to mount it on a gift package, card or ornament.

In all of the disclosed embodiments, the battery used preferably has no outer insulating casing, but only the conductive casing, exposed so that sufficient electrical coupling is maintained. The plastic components of the apparatus may be any suitable plastic, such as polyethylene and polypropylene. The conductive and non-conductive elements of the apparatus may be any suitable electrically conductive and insulative materials.

While only several embodiments of the present invention have been shown and described, it will be obvious to those persons skilled in the art that many changes and modifications may be made thereunto without departing from the spirit and scope of the invention.

I claim:
1. Apparatus for mounting and holding a battery and lamp on an illuminated gift package, greeting card, ornament or the like, comprising:
a planar sheet of electrically non-conductive material, having a pair of rectangular-shaped flaps integrally formed with said sheet which are scored so as to be foldable into a pair of upwardly extending triangular shaped support members;
an electrically conductive sheet of material, disposed on one side of said non-conductive sheet and said support members, said members engaging a conductive casing provided on the battery and electrically coupling the battery to said conductive sheet of material;
adhesive means, disposed adjacent said flaps, for securing the battery between said flaps on the surface of said sheet of conductive material; and
mounting means, disposed over the positive terminal of the battery, for receiving the lamp and causing electrical coupling of the lamp to the battery.

5. The apparatus as recited in claim 4, further comprising spring means, integrally formed with said elongated strip of conductive material and disposed in said recess between one end of said housing and the battery, for exerting a longitudinal force on the battery so that it engages said lamp socket in said recess and illuminates the lamp disposed therein.

6. The apparatus as recited in claim 5, wherein said spring means comprises one end of said strip of metallic material, bent so as to be disposed perpendicular to the longitudinal axis of said strip, and having said one end folded in an accordion fold and disposed between the end of said housing and the battery.

7. The apparatus as recited in claim 4, further comprising means, integrally formed with one end of said housing, and disposed in said recess in said housing, for engaging one end of the battery and exerting a longitudinal force on the battery so that the positive terminal thereof engages said lamp socket in said housing and illuminates the lamp.

8. The apparatus as recited in claim 7, wherein said means comprises a spherical-shaped member, projecting from said housing into said recess.

9. The apparatus as recited in claim 7, wherein said means is a horizontally disposed cylindrical shaped member, projecting from said housing into said recess.

10. The apparatus as recited in claim 4, wherein said cover and said housing are constructed of resilient, soft plastic material.

11. Apparatus for mounting and holding a battery and lamp on an illuminated gift package, greeting card, ornament of the like comprising:
integrally formed therewith, disposed over the battery for securing said strip on the positive terminal of the battery, so that when the lamp is disposed in said first aperture the base thereof engages said sheet of conductive material and the positive terminal of the battery, and the battery is electrically coupled to the lamp, thereby illuminating the lamp.