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Roth

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[54] **ELECTRICALLY ILLUMINATED JEWELRY**

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[52] **U.S. Cl.** ..... **240/6.4 W,** 240/10 R, 240/59, 339/11

[51] **Int. Cl.** **F21v 33/00,** F21v 21/00

[58] **Field of Search** ..... 240/6.4 W, 6.4, 2, 10.5, 240/59, 10; 339/11, 176 L

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[57] **ABSTRACT**

The present invention is an improvement in electrically illuminated jewelry which may be worn on the clothing. The basic form of the invention consists of three parts (1) the lighted ornament itself, (2) a battery container including batteries and (3) a catch. The ornament houses the lamp(s) and has at its rear two pointed studs which pierce the clothing, each stud providing an electrical connection to the lamp(s). The battery case is normally used behind the clothing upon which the ornament is worn, and has leads which engage the two pointed studs which pierce the clothing. The catch engages one of the pointed studs thereby locking together the battery case, the ornament and the section of clothing upon which the ornament is used.

2 Claims, 2 Drawing Figures

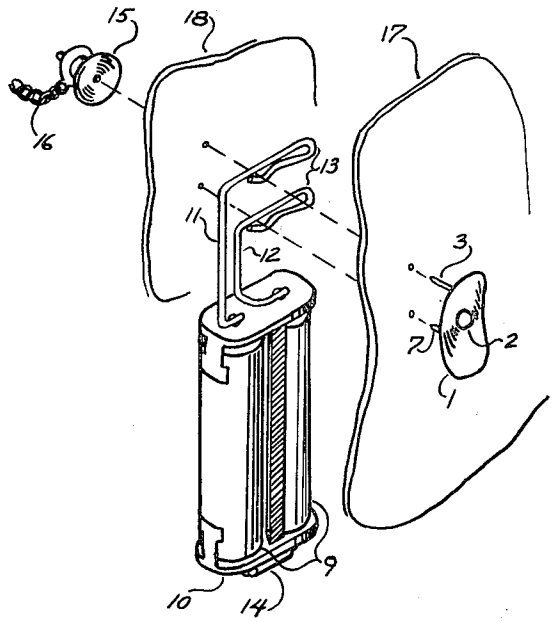


FIG 2

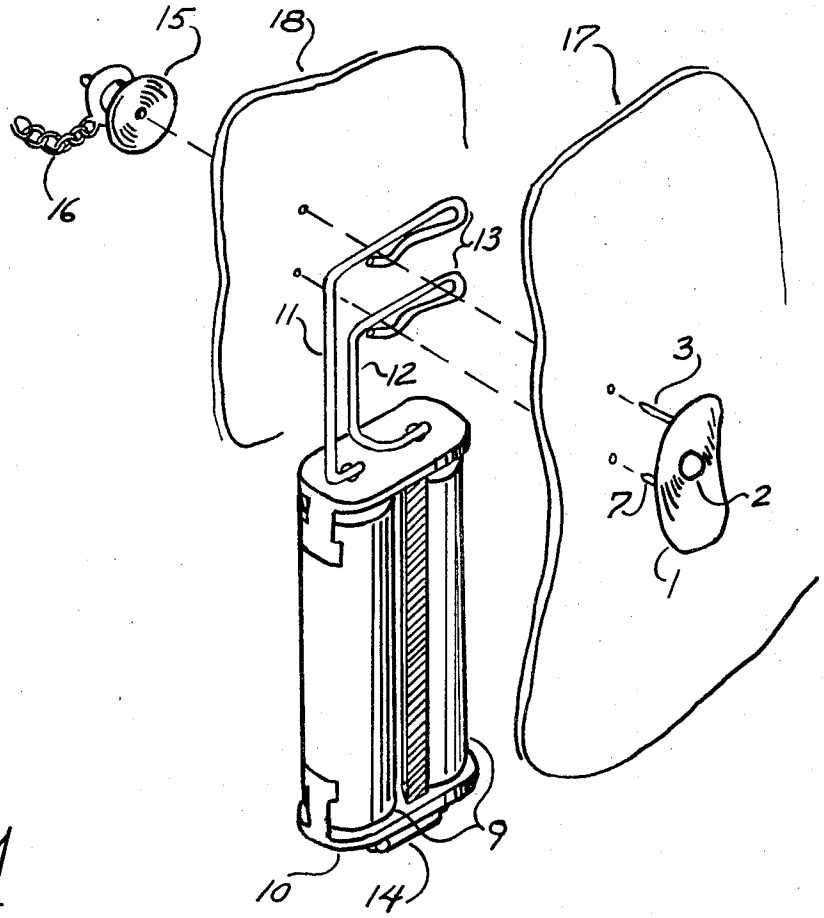
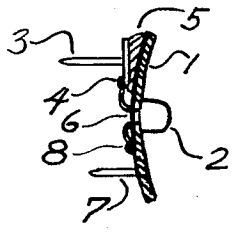


FIG 1



ELECTRICALLY ILLUMINATED JEWELRY

The present invention relates to illuminated jewelry ornaments which may be worn on the person, on the clothing or as a necktie ornament commonly known as a tie tac.

One of the objects of this invention is to provide very long battery life through the application of low current drain solid state light sources, one type of which is known commonly as a light emitting diode, to illuminated jewelry ornaments.

A further object of this invention is the mechanical and structural simplification resulting from the elimination of the necessity of employing switches or other means of circuit interruption due to the inherently long battery life associated with the use of said low current drain light emitting diodes.

An additional ofject of the present invention is the elimination of lengthy connecting wires between the battery supply and the ornament.

An additional object of the present invention is the achievement of a simple and fast connect and disconnect means between the ornament and the battery.

An additional object is the elimination of the need for bulb replacement through the use of said light emitting diodes which feature indefinitely long lifetimes.

An important feature of the present invention is the extremely simple removal and emplacement of the ornament and ease of separability of the ornament from the battery supply.

Accordingly, these characteristics are realized in the present invention which consists of an illuminated ornament and a spearate battery compartment designed to connect directly to and be supported by two pointed studs protruding from the ornament. The battery container normally engages the studs behind a portion of the clothing pierced by the studs.

Although the following description is based for simplicity on an ornament with one light source the scope of this invention is not limited to any number of lamps.

The above objects and features, as well as others, of the present invention will become apparent from the following detailed description and accompanying drawing in which:

FIG. **1** is a side view of an embodiment of the ornament showing details of its structure.

FIG. **2** shows the relationship of the battery supply to the ornament and how it is typically worn.

The normally observed part of the ornament consists of a base **1** and a lamp **2** affixed to the base. The base **1** is shown in FIGS. **1** and **2** as a rounded rectangle although it would ordinarily have any ornamental shape or size desired with one or several lamps artfully located. The pointed stud **3** is connected to one of the **2** connecting leads from the lamp at **4** and is bonded at **5** with an insulating support material. A hole in the base at **6** admits either the lamp base or the lamp connecting leads. A second stud at **7** is supported directly by the base **1** and is electrically connected to the second lamp connecting lead at **8.** Although lamps with two leads are described herein, this invention also encompasses the use of lamps with one lead in which a second connection is made through the metallic body of the lamp directly into supporting base **1.**

Electrical current for the lamp is supplied by one or more batteries **9** either disposable or rechargeable which are snapped into a battery container **10** which

serves to compactly connect the batteries to connecting leads **11** and **12** which engage ornament studs **3** and **7** respectively. Loops at **13** may be used as springs to ensure wire pressure for a tight connection although any type of connecting means usable with the context of this invention as, but not limited to, a small clip, or sleeve, or coil, or helix or press-on tab may be substituted at the point of engagement.

A current limiting means consisting of a resistor in series with the batteries is shown at **14** for the cases where the type of lamp requires limited current. Current limiting may be achieved in various ways including the use of a fixed or a variable resistor in series with the battery/lamp circuit.

The value of the resistor chosen, hence the current drawn has an effect on the light intensity and the battery life. By way of example only, a 470 ohm resistor with two 1½ volt batteries and a 1½ volt lamp will provide a suitable light intensity for about 200 hours from AAA size cells. For the last several hours of use, the user may short circuit the resistor by such means as a piece of aluminum foil placed in the the battery case to get increased lamp intensity. Different values of current may be established consistent with different luminosities and battery lifetimes.

The size and shape of the batteries and the case and the leads are by way of example only and are not intended to limit the scope of this invention.

Although the current limiting means is shown on the battery, it may be included anywhere in the circuit or even as part of the lamp or ornament.

The studs **3** and **7** are normally unequal in length, the longer one, in this case **3,** is designed to engage a catch mechanism **15.** The catch **15** may be equivalent to standard tie-tac catches and may or may not have an associated chain **16.**

The ornament is normally worn with the base **1** and lamp **2** outside of the clothing with studs **3** and **7** pierced through the garment **17.** The batteries **9** and case **10** are within the garment with the connecting leads **11** and **12** engaging studs **3** and **7** and completely supported by them. The studs **3** and **7** may then penetrate additional layers **18** of material before engaging catch **15** to stud **3.** The multiple penetrations represent application of the ornament as a tie tac whereby the batteries are thus located within the large tube of the neck tie, and the studs are pierced through both tubes of the neck tie, as is normally the case, before engaging the catch. Another example of use of the ornament is on a jacket or a sweater with the batteries and catch located directly behind a layer or layers of material.

Having thus described this invention with but one embodiment illustrated and described, it will be apparent to those skilled in the art that various departures may be implemented while remaining within the spirit and scope of this invention and the following claim.

I claim:

1. An illuminated jewelry ornament intended for wearing on the person consisting of a suitable ornament, a light source attached to the ornament, two pointed studs affixed to the ornament insulated from each other providing an electrical connection to the light source, said studs designed to pierce clothing, a separate battery unit consisting of a battery holder and two connecting leads fixed to the holder for engaging the studs to provide an electrical path from the battery to the light source, a fixed current limiting means at

some point in series with the circuit, and a catch mechanism to engage one of said pointed studs for the purpose of securing it to the clothing and to one of the battery holder leads.

2. An illuminated jewelry ornament intended for wearing on the person consisting of a suitable ornament, a light source attached to the ornament, two pointed studs affixed to the ornament insulated from each other providing an electrical connection to the light source, said studs designed to pierce clothing, a separate battery unit consisting of a battery holder and two connecting leads fixed to the holder for engaging the studs to provide an electrical path from the battery to the light source, a variable current limiting means at some point in series with the circuit, and a catch mechanism to engage one of said pointed studs for the purpose of securing it to the clothing and to one of the battery holder leads.

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