United States Patent

Power

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[45] **Sept. 5, 1972**

[54] **LIGHTED EARRING**

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[52] **U.S. Cl.** .....**240/6.4 W**, 200/152

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

[58] **Field of Search** .....240/6.4, 6.4 W, 3.1; 200/152

[56] **References Cited**

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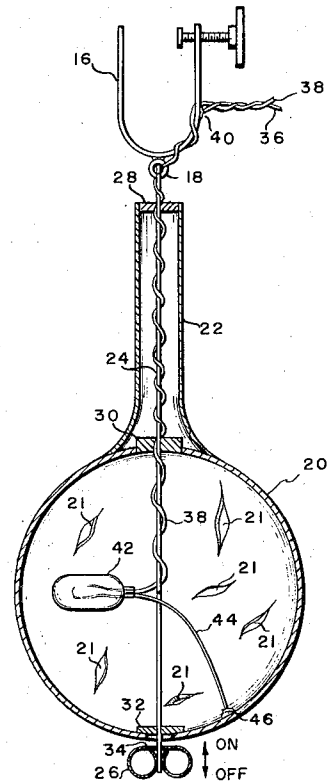
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[57] **ABSTRACT**

A lighted earring has unique lighting effect arrangements including a control switch mechanism for controlling lighting thereof and variable color display arrangements for the earring unit.

5 Claims, 7 Drawing Figures



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SHEET 1 OF 2

Fig. 1

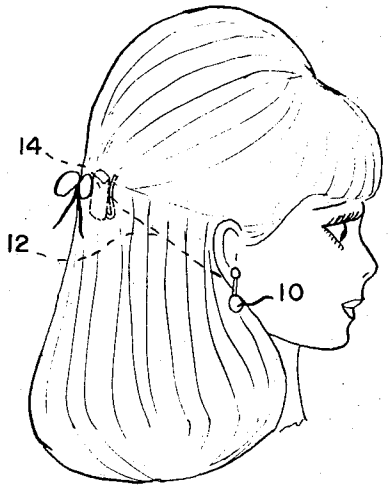
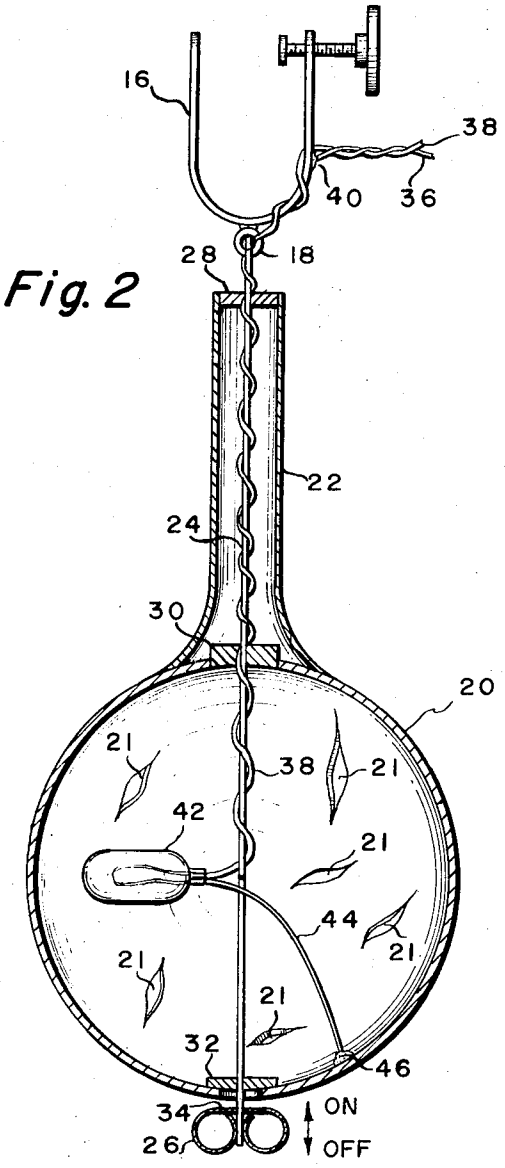


Fig. 2



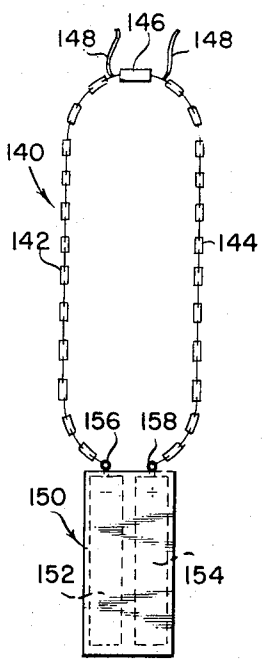


Fig. 7

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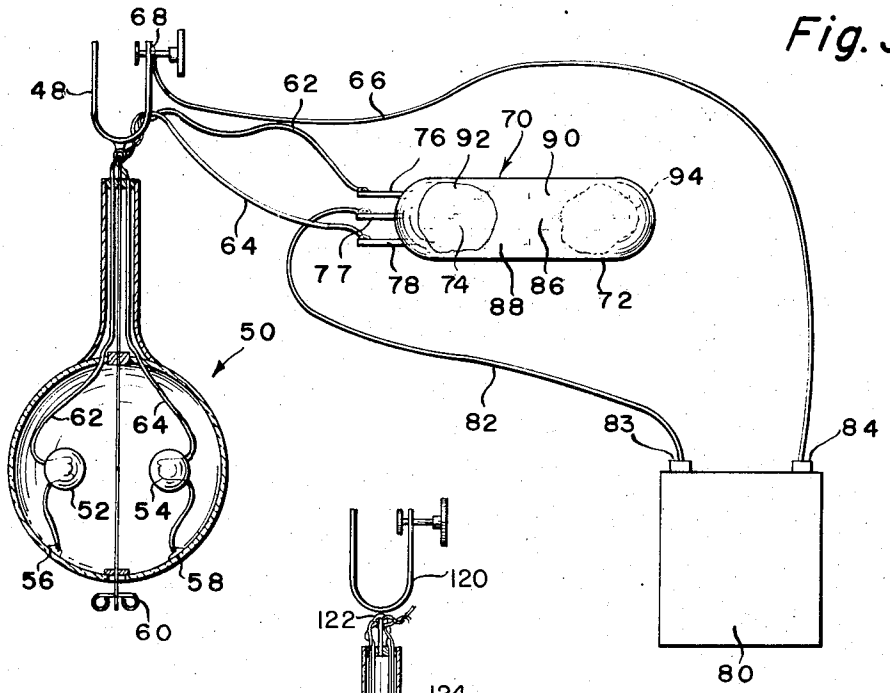


Fig. 3

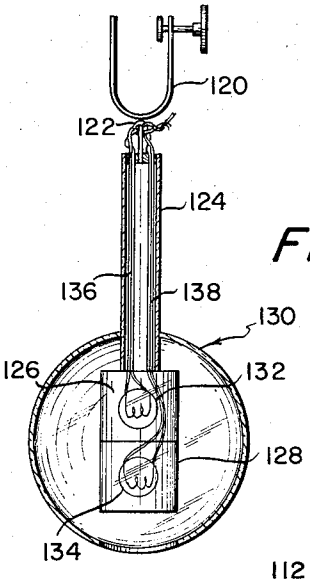


Fig. 6

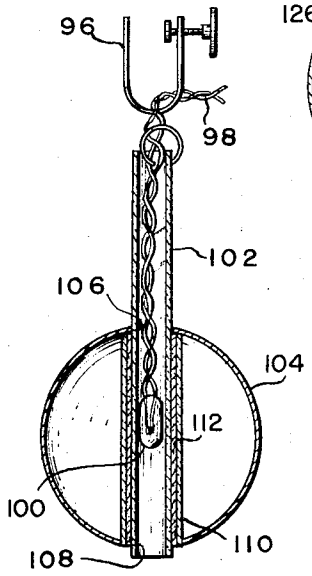


Fig. 4

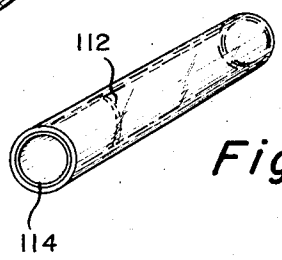


Fig. 5

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LIGHTED EARRING

SUMMARY OF INVENTION

The market for costume jewelry has grown tremendously within recent years, with a larger demand for more outstanding and varied costume jewelry pieces. This is particularly true with the market for earrings. Several types of lighted earrings have been proposed in the past, but have not gained universal acceptance because of their size, cost, and lack of ornamentality. These drawbacks have been overcome in the instant invention by providing small compact lighting arrangements using tiny lighting elements disposed in the interior of the earring hidden from view. Various types of lighting effects including blinking, and color changing arrangements are brought about so that several different lighting effects can be produced by the user. These changes have imparted a new appeal and marketability to lighted earrings not possible with the prior types of lighted earrings.

Accordingly, this invention relates to lighted earrings, and has for its principal object the creation of a lighted earring which is distinctively ornamental and can produce different lighting effects.

It is a still further object of this invention to provide a lighted earring which can have many different designs and can produce different lighting effects.

It is a still further object of this invention to provide an ornamental lighted earring similar in appearance to conventional type of earrings, giving no indication that they contain lighting means.

It is a still further object of this invention to provide a lighted earring which is compact and inexpensive, and has simple switching means for controlling it.

It is a still further object of this invention to provide a lighted earring which can be turned on at will to give either one or several different colors.

It is a still further object of this invention to provide a novel switch means on the earring itself, permitting the user to very simply turn the lighting means associated with the earring on or off.

It is a still further object of this invention to provide a lighted earring which will change color.

It is a still further object of this invention to provide novel switch means in circuit with the illumination element of the earring whereby movement of the user will control the lighting elements.

It is a still further object of this invention to provide a lighted earring wherein the user can readily select any one of several colors that the lighted earring is to give off.

These and further objects and advantages of this invention will become apparent from the following description and claims.

DESCRIPTION OF DRAWINGS

FIG. **1** is a side view illustrating the manner in which the lighted earring unit of the subject invention is worn.

FIG. **2** is an enlarged sectional view of a lighted earring illustrating the wire and switch arrangement thereof.

FIG. **3** illustrates the lighted earring with a position sensitive mercury switch in circuit.

FIG. **4** shows another modification of an earring having provision for receiving color changing cartridges.

FIG. **5** is a perspective view of a color cartridge.

FIG. **6** shows another type of earring unit for providing different color lighting.

FIG. **7** shows a necklace type support and conducting arrangement for the power pack.

DESCRIPTION OF INVENTION

FIG. **1** shows the earring as it would appear in use on a person wherein the lighted earring **10** is mounted on the ear, and is connected by wires **12** shown in dotted outline to the battery pack **14**, also shown in dotted outline, both the wires and the battery pack being worn under the hair. The battery pack is clipped to the hair of the wearer and is supported by the hair to which it is clipped.

FIG. **2** shows an enlarged detailed view of the earring showing the earring clip **16**, which is connected to the ear. It has a circular link **18** at the bottom thereof for supporting the earring.

The earring is of the pendant type made of metal and having a hollow, circular, ball-like configuration **20** with a plurality of openings **21** through which light is passed, and a hollow supporting stem section **22** integral therewith and disposed immediately below the earring clip **16**.

The earring is supported on an elongated metal supporting rod **24** which extends completely through the earring from top to bottom and is pivotally connected at the top thereof to the earring link **18**. The elongated rod serves both as a support for the earring and also as part of the switch mechanism for turning on the earring through the finger grasping piece **26** at the bottom of the elongated rod **24**.

The elongated rod passes through the support bearing silicone pieces, **28**, **20** and **32**, within the earring, and has a slight friction drag so that the earring itself can be moved up or down on the rod whereby the contact piece **34** on the finger grasping switch piece **26** will make contact with the outer periphery of the earring hollow portion **20**. This part of the earring is metallic, and is a conductor. Contact piece **34**, metal rod **24**, link **18** and clip **16** provide an electrical path to solder terminal **40**.

The electrical circuit for lighting the earring is also illustrated in FIG. **2**, where the wires **36** and **38**, connected to the battery pack (not shown), supply current. Wire **36** is grounded to the earring clip by a solder connection at **40**, while wire **38** passes along the earring clip, and down into the earring, where it is wound about the elongated metal supporting rod **24** and connected to the the miniature bulb **42** disposed within the earring.

It can be seen that when the earring is grasped by the user and moved downwardly on the elongated support rod **24** to bring the lower part of the earring hollow portion **20** into contact with the contact piece **34**, a circuit will be completed, thereby lighting the earring.

The light from the bulb will pass out from the earring through the many small perforated openings **21** in the earring hollow portion, giving an interesting lighting effect to the earring.

A modification for creating different colors and a twinkling light from the earring is shown in FIG. **3**. The structure of the earring is similar to that of FIG. **2**, having an earring clip **48**, a pendant type hollow earring generally designated at **50**, and containing two dif-

ferently colored miniature bulbs **52** and **54**. The earring is metallic and the miniature bulbs **52** and **54** are respectively connected thereto through solder terminals **56** and **58**. The miniature grasping switch **60** acts to complete or break the electrical circuit to the bulbs.

An additional switching arrangement is connected in circuit with the bulbs through the wires **62** and **64**, respectively connected to the bulbs **52** and **54**. A ground wire **66** is connected to the earring clip at **68**.

The control for turning the bulbs **52** and **54** either on or off in an alternate fashion is provided by the mercury control switch unit **70**. It consists of a glass outer cylinder **72** in which a small movable ball of mercury **74** is contained.

This mercury control switch can also be used for assemblies other than illuminated jewelry assemblies, such as dresses with lighted panels, or with other types of units to cause either sound or mechanical changes on movement of the switch. In the earring assembly, the switch is mounted on the head and any movement of the head will affect the switch.

The mercury switch assembly **70** has three external connecting terminals **76**, **77** and **78**. The bulb connecting wires **62** and **64** are respectively connected to terminals **76** and **78**.

The power pack **80**, containing several small batteries is connected to terminal **77** by wire **82**. The battery connecting wires **66** and **82** are connected to the power pack **80** through snap fasteners **83** and **84**.

The internal central conductor **86** within the glass cylinder **72** is connected to terminal **77** and extends the length of the glass cylinder **72**. The lower short conductor **88** extends approximately half the length of the cylinder and is connected to the wire **64** through the terminal **78**. Similarly, a long conductor **90** shown at the top of the cylinder extends the length thereof, and is disposed parallel to the central conductor **86**. The first half of the length of conductor **90** has an insulative covering **92** thereon.

It can be seen that the mercury ball **74** in its position at the left will bridge the gap between conductors **88** and **86**, thereby closing the circuit between center conductor wire **82** and the wire **64** leading to the bulb **54**. In this position the complete circuit is made when the earring **50** is moved downwardly to close the gap between it and the contact switch **60**, and the central supporting rod and the earring holder **48**, the latter being connected through line **66** to terminal **84** of the battery **80**.

It will be noticed that no connection electrically is made between the central conducting element **86** and the elongated conductor **90**, because of the insulative covering **92**.

When the mercury switch cylinder **72** is switched to the downward position, moving the mercury ball **74** to the dotted position shown in **94**, the circuit is closed between the central conductor **86** and the long conductor **90**, putting the circuit of bulb **52** in direct conducting circuit with the center conductor wire **82**.

Thus, it will be seen that the bulbs **52** and **54** are alternately placed in circuit with the power pack **80**, depending upon the position of the mercury ball, to produce a change in light coming from the earring when the position of the switch is changed.

This switch is worn by the user in close proximity to the battery pack, so that movement of the head will change the color of the light coming from the earring.

FIG. **4** illustrates a modification of the earring construction of FIGS. **2** and **3**, whereby a single bulb used with a colored cylinder can produce any desired color light.

The earring clip **96** receives the two conductor wires **98** for the bulb **100**. The wires pass down through the hollow support tube of the earring **102** so that the bulb **100** is disposed approximately at the center of the hollow spherical earring member **104**. The elongated shaft **102** is attached to the hollow spherical portion of the earring **104** at **106**, and the bottom of the support tube extends outwardly a slight distance through the lower opening **108** of the earring spherical member **104**. This opening is of sufficient size to permit clearance for receipt of a colored cylinder **110** that is slipped over the lower end of the elongated hollow support tube **102** and up into the interior of the spherical earring member **104**. By using a white bulb for the bulb **100**, any desired color can be produced by using a cartridge **110** having the color desired.

The hollow spherical member **104** can either be translucent, or it may have the variegated openings illustrated in FIG. **2**.

One possibility for producing simple different colored cartridges is illustrated in FIG. **5**. The cylinder **112** is colorless, but a colored piece of cellophane **114** is inserted to produce the desired color.

OPERATION

Referring to FIG. **1**, it will be seen that the wearer merely clips the power pack under the hair at the back of the head, and runs the wires under the hair to the ears where the earring clip is clipped to the lobe of the ear. To light the earring of FIG. **2**, the earring **20** is pressed downwardly against the contact **34** of the finger grasping switch **26**. The bulb **42** will be lighted and will remain so until the switch is turned off.

The earring of FIG. **3** is activated in the same manner by moving the earring **50** down into position against the contact switch **60**. However, in this instance, the mercury switch **70** controls the lighting of each of the two bulbs **52** and **54**. Either one bulb or the other blinks on or off depending upon the position of the ball of mercury **74** in the mercury switch **70**. In this instance, the two bulbs are differently colored, so that the earring flashes from one color to another, depending upon movement of the mercury control switch **70**.

The earring construction of FIG. **4** is somewhat different from that of FIGS. **2** and **3**. The hollow earring **104** is particularly adapted to receive a color cylinder **106**. With the use of a white bulb and differently colored cylinders it is possible to change the color of light emanating from the earring. In this modification, the finger grasping switch **26** of FIG. **1** is not used, and a switch disposed on the power pack, not shown, is used to control the lighting of the earring.

With respect to the mercury switch controlled modification of FIG. **3**, it should be noted that it is possible to use only one bulb that will be flashed on and off with movement of the head of the wearer, instead of using two bulbs which produce the effect of flashing from one color to another.

In FIG. 6 a different type of color changing earring is shown. The earring clip **120** is connected through link **122** to a hollow connecting stem **124** which supports the upper color cylinder **126** and the lower color cylinder **128**. These cylinders are different colors and are integrally attached to each other. The color cylinders **126** and **128** are disposed within the earring generally indicated at **130**. The bulbs **132** and **134** are respectively disposed above one another adjacent to the respective color cylinders **126** and **128**. The power is supplied to bulb **132** through wires **136**, and to bulb **134** through **138**. Cylinders **126** and **128** can be removed from the bottom of the earring, and are similar in construction as the cylinder of FIG. **4**.

FIG. **7** discloses a novel type of supporting and conducting assembly in the form of a necklace generally indicated at **140** which is worn around the neck of the wearer. It is made up of two separate support and conducting strands **142** and **144** which are connected at the top and by a non-conductive clasp or other non-conducting element **146**. Power is supplied to the strands **142** and **144** through the pair of wires **148**.

The power pack unit **150** contains two small batteries **152** and **154**. Conductive strand **142** which is made up of a series of metallic conductive links is attached at its lower end to battery pack **150** at **156** which is connected to the negative terminal of the battery **152**. The matching conducting strand **144** is connected at its lower end to the battery pack at **158** to assist in supporting it, and is electrically connected to the positive terminal of battery **154**.

SUMMATION

This invention produces a novel lighting arrangement for earrings which permits control of the lighting of the earring. A small in-built switch mechanism on the earring itself permits the wearer to readily turn the earrings on or off as desired.

A position responsive mercury switch permits the earring to change colors, or to flash on or off as desired.

And, an earring color changing construction is made possible by the use of colored cylinders which are slipped into the earring and around the illumination source.

Having thus described my invention, what I claim is:

1. A lighted earring, comprising:

a. an earring clip for clasping the ear of the wearer,

b. a hollow earring connected to said earring clip through which light can be passed,

c. a small bulb disposed within said earring,

d. a battery pack worn by the wearer on the head and under the hair,

e. a pair of wires connected to the battery pack and to said small bulb,

f. a push-pull contact switch mounted on the bottom of said earring which appears as a decorative part thereof, and is connected in circuit with said wires for turning said bulb on or off,

g. said switch includes an elongated conductor rod extending the length of said earring, and on which said earring is reciprocably supported

h. said earring being made of conductive material and being insulated from electrical contact with said rod,

i. said rod having contact points and forming part of the battery circuit.

2. A lighted earring as set forth in claim **1**, wherein:

a. one end of said elongated rod extends out of said hollow earring and has a portion which is grasped by the wearer for actuating said switch.

3. The lighted earring as set forth in claim **2**, wherein:

a. the other end of said rod is electrically connected to said earring clip,

b. said grasping portion acts as the electrical switch contact points.

4. A lighted earring, comprising:

a. an earring clip,

b. a pendant-type earring having a relatively large, hollow decorative portion formed of metallic grille-like material,

c. said pendant-type earring is supported by several small links,

d. a small bulb disposed within the hollow portion of said earring,

e. a small battery pack to be worn in the hair of the wearer,

f. a first wire connecting the battery pack to said earring,

g. a second wire extending from the battery pack to said links and into the hollow portion of said earring, and electrically connected to said bulb,

h. an elongated rod forming part of the earring which extends therethrough and is connected at its uppermost section to said metal links,

i. said hollow decorative portion of said earring being reciprocably supported on said elongated rod through insulative bearings,

j. the lower end of said elongated rod extending out from and below said decorative portion, and having a member for making an electrical contact,

k. an electrical circuit between said bulb and a point on said decorative portion, whereby the electrical circuit for said bulb can be opened and closed by reciprocating said decorative portion to bring said electrical contact member into and out of engagement with the lower part of said earring decorative portion.

5. The earring as set forth in claim **4**, wherein:

a. said bulb circuit includes movement actuated switch means for opening and closing said circuit.

* * * * *