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Rochford et al.

[11] **3,818,212**

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[54] **DECORATIVE GUIDE LIGHT**

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[73] Assignee: **General Electric Company,** New York, N.Y.

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[52] **U.S. Cl.** ..... **240/10 R,** 240/106 R

[51] **Int. Cl.** **F21s 1/00**

[58] **Field of Search** ..... 240/10 R, 92, 106 R

[56] **References Cited**

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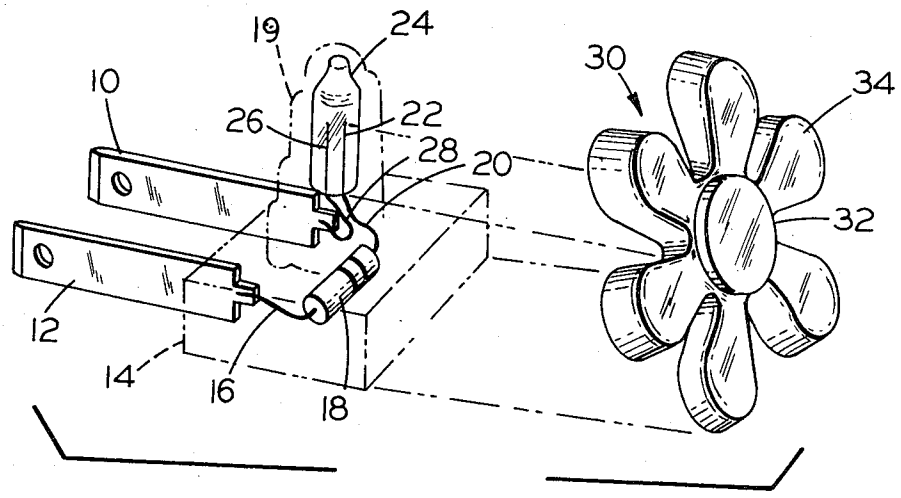
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Primary Examiner—Richard M. Sheer
Assistant Examiner—Michael L. Gellner
Attorney, Agent, or Firm—Paul E. Rochford; P. L. Schlamp

[57] **ABSTRACT**

A decorative article including a source of low level light is provided in a form which gives enhanced decorative effects. More specifically a small source of more concentrated light is provided with decorative elements so that a spreading and softening of the more concentrated light is achieved along with a heightening of the decorative appearance of the article due to distribution and emanation of light from the decorative portions.

5 Claims, 8 Drawing Figures



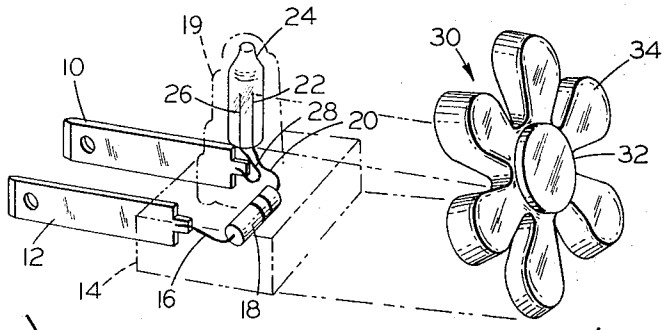


FIG. 1

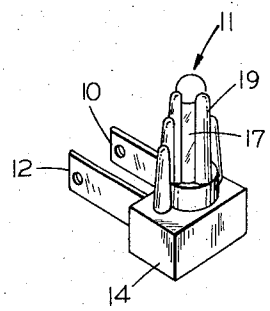


FIG. 8

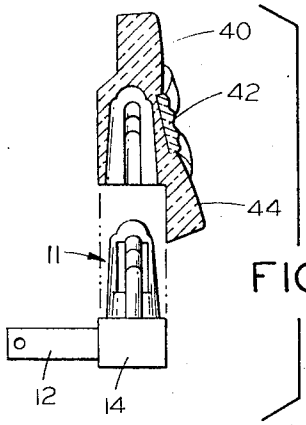


FIG. 2

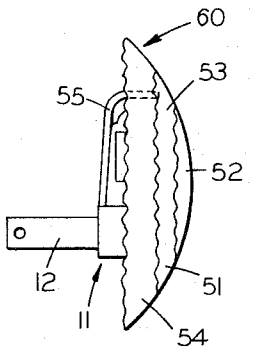


FIG. 5

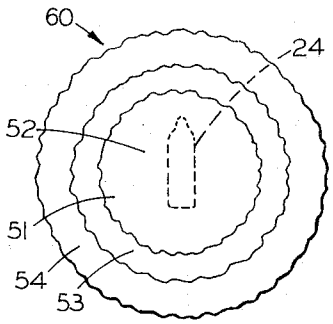


FIG. 6

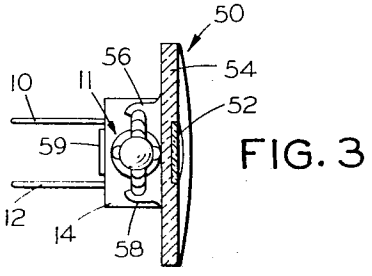


FIG. 3

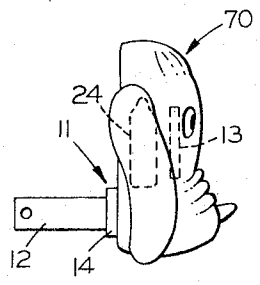


FIG. 7

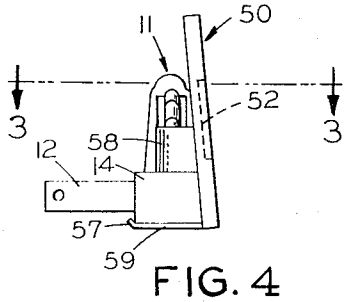


FIG. 4

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DECORATIVE GUIDE LIGHT

The present invention relates to a decorative article emitting a low level of light, more particularly it relates to a low level lighting source having combined therewith decorative elements for distribution of light of said source to make the lighting and decorative elements thereof cooperate for enhanced decorative effects.

Many articles are known in commerce which produce low levels of light for a variety of functional purposes. Such lights are found for example in switches, that is for example, in the push button of switches or in the toggle of switches so that the switch may be located in the dark. Also lights are found in various control devices as indicator lights to indicate the energization of a controlled circuit.

Still other low level lighting articles are employed as sources of light as for example as night lights within a residence. The value of these articles to consumers and users in the home is increased where the light and the article with which the light is associated have decorative features which make the article more acceptable to the user in its normal location. There is normally a functional use for a low level of light within a home as for example in safety and security functions. However, the light source need not be purely functional in appearance and the non-functional appearance can be quite important to the acceptability and actual use of light sources where they are needed. In other words where use of a guide light is desirable in a home for safety sake, it is more likely to be used if the light is decorative than if it is purly functional in appearance. In an article as illustrated above it is preferable to have the light in a housing which is compatible with the decor of the home. Further where low level lighting articles have decoration compatible with home decoration it is even more likely that they will be given wider use of employment within the home to serve safety and other functions because of their better appearance features. For example more such low level lights may be used for safety in lighting hallways or in security applications as in deterring intruders.

In addition the appearance features of a decorative article may be enhanced by a low level light source. Thus it is possible to produce a decorative article the decorative features of which represent the main product values to a user, and these features may be heightened and enhanced by the presence of a low level light source. For such an article the functional lighting as of hallways and the like may be a very minor or negligable part of the product features but the decorative value of the article may be its primary value to the user.

It is accordingly one object of the present invention to provide a decorative low level lighting article in which there is greater cooperation between the decorative effects produced by the decorative elements and the light emanating from the decorative element thereof.

Another object of the present invention is to provide an improved guide light article having improved light distribution.

Another object of the present invention is to produce a decorative low level lighting article at a relatively lower cost and with greater fabricability.

Still another object of the present invention is to provide a decorative low level lighting article in which

unique and novel decorative effects are associated directly with the article.

A further object of the present invention is to provide a decorative low level lighting article in which the decoration of the article may be modified and changed at relatively low cost.

A still further object is to provide a guide light having a variety of combinations of materials which can be included in components usable therewith.

Other objects and advantages of the invention will be in part apparent and in part pointed out in the description which follows.

In one of its broader aspects the objects of the present invention may be achieved by providing a decorative low level lighting article comprising

a light source with a low level of heat emission,

means for connecting said light source to a source of electric power

said light source being at least partially supported in a plastic support,

a decorative light diffuser adapted to transmit at least part of the light of said light source,

said diffuser being mounted to receive light from said source for transmission to a viewer

said diffuser having a portion with higher light transmission properties at greater distances from said light source

and having a portion of lower light transmission more proximate said light source.

In another of its broader aspects the object of the present invention may be achieved by providing a decorative guide light comprising

a source of light of low heat emission,

said source being at least partially embedded in a plastic embedment,

a pair of power blades supported in and extending from said embedment,

electrical connections in said embedment between said blades and said light source to supply electric power to said source,

a decorative ornament mounted on a portion of said embedment generally opposite said blades,

said ornament having good transmission properties for the light of said source,

and said ornament having a portion of lower light transmission positioned to reduce glare of light emitted from said light source.

The manner in which the present invention may be best carried into effect is described with reference to the accompanying drawings in which:

FIG. 1 is a perspective view, in part in phantom, of components which may be assembled into a decorative guide light as provided by the present invention.

FIG. 2 is a side elevation of a pre-assembly arrangement of components which may be assembled into another form of guide light according to the present invention.

FIG. 3 is a top plan view of another form of article of the present invention in part in section as seen along the line 3—3 of FIG. 4.

FIG. 4 is a side elevation of the article shown in FIG. 3.

FIG. 5 is a side elevation of still another form of article provided pursuant to the present invention and involving use of a different form of base in connection with a decorative element.

FIG. 6 is a front elevation of the article of FIG. 5.

FIG. 7 is a side elevation of another form of article as provided by the present invention.

Referring first to FIG. 1 there is seen a plug-in guide light product including two power blades **10** and **12** having their free ends extending out from and having their captive ends embedded in a plastic body **14.** The internal or captive end of power blade **12** is connected by wire **16** to resistor **18** and resistor **18** is in turn connected by conductor **20** to the one electrode **22** of a source of low level illumination such as glow lamp **24.** The other electrode **26** is in turn connected by conductor **28** to the embedded end of the blade **10.**

The plastic of embedment or body **14** may be formed of a generally white frosty plastic, a clear plastic or a plastic containing dyes or pigments which give the overall product a relatively high transmission for light emanating from source **24.** There is a slight diffusion of light through the upper tower portion **19** of the embedment. In general, however, to the viewer of the overall lighting effect the light is quite concentrated in the sense that there is a sharp contrast over a short distance between the point of brightest light emission and an adjoining end or part of the article where level of light emission is at its lowest level. The lowest level would be in the case of the frosty white plastic enclosed light from portions of base **14.**

In other words there is a very sharp drop in the level of light intensity within a short distance over the light emitting surface of the article. High lighting contrast exists where the physical distance from point of highest light intensity to the point of lower or lowest light intensity is relatively small. Such high contrast is offensive to the eyes of one viewing such products particularly in the darkened building area in which they are likely to be viewed. The high contrast is offensive in the same sense that a bare incandescent bulb is offensive when compared to the same bulb with a lamp having a diffuser large enough to soften glare and reduce the sharpness of shadows cast from the light source.

Applicants have discovered that there is a very pleasing esthetic effect which is achieved where a decorative article is used in association with a guide light article just described and where the decorative article is made up of an outer zone of higher light diffusion and transmission and where a portion of the decorative article, and particularly that seen when viewing the article from a forward position, is of lower light transmission.

In this respect, that is with respect to the angle of viewing, it will be realized that the incorporation of power blades in such an article or extending out from what may be termed the back of the article will result in the side opposite or away from such blades being the preferred side for viewing esthetic attributes of the product. The side opposite the side from which the blades extend is accordingly referred to as the forward or front or viewing side.

A decorative article such as article **30** may be used in connection with an embedded glow lamp article such as **11** to attain heightened decorative effects for the article **30** as well as improved lighting from source **11.** These combined effects are achieved in part because article **32** has a center **32** of lower light diffusion coupled with petals **34** having appreciable light diffusion for the frequency of light emitted from low level light source such as **24.**

The size of the diffuser **32** is correlated to the size of the source of concentrated light from source **24** that is, to the size of a coluum of concentrated light from such a source and not to the size of the lamp **24** itself. For example, where source **24** is a glow lamp the portion of the lamp which actually glows is appreciably smaller than the lamp itself. The glowing portion is usually limited to the upper half of the electrodes **22** and **26,** a glow being emitted from essentially all sides of these portions of these electrodes.

Extending out from what is in this specific illustration a central diffuser portion **32** of lower light transmission, is a peripheral decorative diffuser portion of higher light transmitting and diffracting properties **34.** The transmission of light through the peripheral diffuser portion **34** as well as through the central diffuser **32** is enhanced where there are relatively fewer interfaces, and particularly fewer air interfaces, between the light source and the outer surface of the overall diffuser including the central low transmission diffuser **32** and the outer higher transmission and diffraction diffuser **34,** from which the light is emitted. This includes the embedding plastic **19** as well as any transparent or translucent cement or glue used in mounting the diffuser to the guide light as well as the overall diffuser including the inner diffuser portion **32** and outer diffuser portion **34.** Both the central portion of lower light transmission and the outer portion of higher light transmission perform a diffusing function in the sense that they convert a higher level of more concentrated light to a lower level of more distributed light.

The diffuser provides pursuant to this invention an overall reduction of the high contrast which characterizes light emission from a guide light article such as FIG. **8** and in addition provides a distribution of light which is related to the decorative diffuser of the article to enhance its decorative attributes.

Illustrating with reference to the articles of FIG. **8** and FIG. **1** it is known that the article of FIG. **8** when viewed by a user has a hot spot of light particularly when viewed in a darkened surrounding. The same guide light, illustrated more schematically in FIG. **1** to show the light source or bulb **24,** would have essentially the same light emission, the hot spot being of somewhat greater intensity where the embedding plastic **14** is of clear rather than frosty white plastic. However, by mounting a diffuser to it pursuant to this invention the hot spot can be effectively eliminated while providing essentially the same level of light from the source and at the same time greatly improving its appearance features.

Considering diffuser **30,** it is made up of a flower shaped element having a central forward decorative pistil portion **32** and a set of outwardly extending petals **34** comprising a petal portion. The forward pistil or stamen **32** is actually at the front surface of the plastic flower so that the material of the petals extends behind the pistil and constitutes part of the petal portion in the sense of light transmission.

When the flower diffuser **30** is mounted to the guide light along the dashed lines extending between the outline of pistil **32** and the electrodes **22, 26** light from lamp **24** spreads through the plastic of the petal portion of the diffuser and enhances its appearance features. A lower level of light passes through pistil portion **32** so that there is not a high contrast in the level of light emanating from the outer surface of the pistil portion as

compared to that emanating from the outer surface of the petal portion. When viewed from various angles, that is other when viewed from points other than those lying along a line extending from the filaments through the pistil and on out, decorative highlights of pleasing esthetic effect are seen as the light is distributed through the plastic and out along the petals. The petal portion is accordingly formed of a material of higher light transmission than the pistil portion. Depending on the shape of the petals of the petal portion as well as the material of which it is formed decorative highlights may appear at the end of several of the petals simultaneously as well as a halo around the pistil, the pistil standing out by reason of different light transmission properties and also because of different coloration. A cast polyester resin flower mounted to a guide light with a translucent glue gave distinctly improved decorative effects in part because the light transmission was directly through the glue and into the cast petal portion of a diffuser such as **30.**

Pursuant to this invention the light distribution is coupled with the decorative elements of the diffuser so that the product appearance is less functional in the unlighted condition and is enhanced in the lighted condition. Because a product such as a glow lamp lighted product will give continuous illumination for a period of five or more years. It can be used continuously without unplugging or switching off of light where the illumination level or more accurately the contrast of illumination is not sufficiently high as to attract attention to the article during normal daylight hours. Reduction of the higher contrast pursuant to this invention is effective in making such articles more acceptable in a home for continuous in place operation. In other words such a product will normally be used in a home in illuminated condition as its power consumption is so low and life expectancy so long that there is no real need to shut it off. By improving its appearance in the lighted condition and reducing the higher lighting contrast, particularly as it appears in a darkened room, the use of decorative guide lights is made more acceptable in homes and other buildings where they will be left "on" when the room is either lighted by day light or other light or in a darkened condition.

Referring to FIG. **2** the guide light **11** has a lamp such as **24** of FIG. **1** in essentially the position shown in FIG. **1.** A lens **40** has an inner zone **42** of lower diffusion or transmission of light and has an outer region **44** of higher transmission and reflection of light received from guide light **11.** Preferably the lens **40** is provided with an envelope **41** which may be made to conform closely to the contour of the portion of the base containing the light source without having the back of the lens extend beyond the back of the lamp embedment base **14.** This is to avoid interference with the insertion of blades into a wall receptacle. The lens may be conveniently bonded to the base so that the light is diffused or transmitted through what amounts to a light path between the embedment of the base and the plastic of the housing.

Another form in which the article of the present invention may be formed is illustrated in FIGS. **3** and **4** wherein a mechanical mounting or clip form of the decorative element is illustrated. The decorative element may be made interchangeable so that more than one such diffuser may be associated with a common base to provide a number of decorative effects from use of a single base in cooperation with a plurality of diffusers. In FIG. **3** the decorative element **50** has an outer portion of greater light transmission and reflection **54** and an inner portion of lower light transmission **52** disposed proximate the glow lamp **24** of guide light **11.** Spring arms **56** and **58** hold onto each side of the upright or tower portion rising from the base **14,** and a third spring arm **59** extends from the lower portion of lens **50** to engage the underside of the base **14,** spring arm **59** extends back further to engage the rear surface by the end hook **57** of the spring arm.

In FIG. **5** the lens **60,** shown forward of the lamp **24** has a zone **52** which has a thicker mid-portion and thinned out edge portion so that there is a gradation of light transmission through the portions of the zone **52** of the lens of lower transmission from lower transmission at the center to higher transmission at laterally greater distances from the center. The lens may include a further zone **53** of distinct transmission properties or color properties and this may in fact be a zone in which there is a gradation of the light diffusing material of zone **52** through the lens toward an outer and rear region of higher light transmission and reflection **54.**

Where it is desired for esthetic effects to concentrate light from a source such as guide light **11** into the forward lens a reflector, such as a reflecting layer of a sheet material, may be mounted onto and bonded to the back of the lens embedment. A front view of the article of FIG. **5** is shown in FIG. **6** and the relationships of the zones to the light source **24** are evident with the light source **24** being shown in phantom.

With reference now to FIG. **7** one of the objects of the arrangement of a lens and other parts of the device is to obtain a relatively uniform distribution of light from a source through the decorative lens elements or to achieve a greater and lesser distribution of light to those portions which, by virtue of their decorative attributes, require a higher concentration of light for esthetic emphasis.

With reference to the article of FIG. **7** for example a diffuser element **72** may be provided proximate the light source and may be shaped so that light will be distributed to portions of the dog's face shown to give the face a more evenly lighted as well as an animated expression. This is achieved in part by mounting the low transmission diffuser **72** forward of the lamp to prevent formation of a distracting hot spot at this point. Also, it is achieved by shaping the low transmission diffuser **72** so light can pass around the diffuser to be emitted in greater degree from the region of the eyes and lend animated appearance to the eyes.

While control of light transmission and distribution is acheived by use of article such as shown in FIG. **3** wherein there is a minimum separation of light source and decorative diffuser and wherein hot spot is prevented by incorporating a lower transmission element such as **52,** the thickness of the lower transmission element **52** will depend on the transmission characteristics of the material of the element. For material which is opaque or nearly opaque to the light of the source the thickness can be reduced to the level where the pattern can be printed on or where a pre-printed sheet material may be mounted as by a pressure sensitive adhesive onto the diffuser element such as **50.**

Articles having designs such as aminal and floral designs printed on thin vinyl sheet where this vinyl sheet is mounted by a pressure sensitive adhesive or similar

mounting method to a diffuser, have been prepared and are found to have very pleasing esthetic effects. The light comes through the lighter colored printed areas and outlines the darker printed areas due to diffusion or spreading of light through the diffuser such as **50** prior to passing through the decorative vinyl sheet. In such articles a darker printed region at the location where the hot spot would occur eliminates the distraction of the high lighting contrast. The diffuser may be shaped to the outline of the decorative printed matter such as an owl or butterfly, etc., and be decoratively enhanced by the transmitted light as the diffuser is mounted in close conformity to the guide light base so that there is little or no air gap between the light source and the decorative article associated therewith.

Means by which this invention may be practiced are set forth in copending application Ser. No. 186,060 filed Otc. 4, 1971 and assigned to the same assignee as this application.

What is claimed is:

1. A decorative low level lighting article,

said article comprising,

a source of light of low heat emission,

means for connecting said light source to a source of electric power,

a decorative element mounted in close proximity to said source,

said decorative element being light transmitting and having at least one portion the material of which is of lower light transmission and at least one portion the material of which is of higher light transmission,

said portion of lower light transmission being disposed proximate said source of light to reduce the contrast in light level between portions of said decorative article proximate said source of light and portions at greater distances from said sourcee of light,

and at least one portion of higher light transmission more remote from said light source than said portion of lower light transmission proximate said light source.

2. The article of claim **1** in which said source of light is a glow lamp.

3. The article of claim **2** in which said source of light is held in a molded plastic support.

4. The article of claim **3** in which said decorative element is mounted to said plastic support.

5. The article of claim **3** in which said decorative element is mechanically mounted to and conforms to said plastic support.

* * * * *