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ABSTRACT

A lighting ornament for mounting has a transparent body with a cavity for receiving a light conduit comprising a light pipe with a translucent base and a finial at opposing ends. The cavity also holds a volume of liquid in which is suspended particles with light
5 reflective surfaces. The lower end of the body is adapted to sit upon an illumination apparatus such that light from the illumination apparatus passes through the lower end into the cavity for illuminating the cavity and the liquid and particles therein and into the light conduit for transmitting light to the finial.

LIGHTING ORNAMENT**Technical field**

The present invention relates to lighting ornaments, and more particularly to translucent lighting ornaments which contain a fluid.

5 **Background of the Invention**

Translucent ornaments or sculptures made from crystal glass, or perhaps from plastics, are created as works of art to depict various forms. Common examples include human figurines, animals, flowers and fruit, and items such as vases and musical instruments. Crystal glass sculptures are treasured for their beauty and judged, like precious stones, by the quality (clarity) of the glass, which is traditionally non-coloured. Traditionally, too, sculptures are viewed stationary under non-coloured overhead lighting, however illuminating such ornaments in this way can produce only a limited number of visual effects. It will be understood that a need remains for translucent sculptures or ornaments offering improved aesthetic effect, as well as constructional and manufacturing advantages.

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Lighting ornaments are presently known wherein air is bubbled through a liquid in tubular and other containers, and wherein the coaction of the air bubbling through the liquid is illuminated for the aesthetic effect thus obtained. However, these devices are cumbersome to handle and complex in construction and operation.

20 It is an object of the present invention to overcome or substantially ameliorate the above disadvantages or, more generally, to provide an improved lighting ornament.

Disclosure of the Invention

According to one aspect of the present invention there is provided a lighting ornament including

5 a light conduit comprising a light pipe having opposing first and second ends, with a translucent base at the first end;

a finial at the second end;

a transparent body with a cavity holding the light conduit, the cavity bounded by walls and a closed lower end;

10 a volume of liquid disposed within the cavity between the base and walls of the cavity and the light pipe; and

a plurality of particles having light reflective surfaces disposed within the volume of liquid in the cavity;

whereby the lower end of the body is adapted to sit upon an illumination apparatus such that light from the illumination apparatus passes through the lower end into the
15 cavity for illuminating the cavity and the liquid and particles therein and into the light conduit for transmitting light to the finial.

By adapting the lighting ornament to be illuminated from below in this manner, illumination of the liquid and particles, as well as the finial, either together or separately, provides an interesting play of light and better way to appreciate the
20 internal details of the ornament which may be difficult to view under conventional overhead lighting due to reflections from multiple outer faces.

Preferably the light pipe is circular in cross-section. Preferably the light pipe is formed of transparent material, most preferably crystal glass. Preferably the light pipe is formed of solid material. Optionally, a thin optical layer may be formed on the external surface of the light pipe, or else the light pipe may be tubular. While these latter options may allow light transmission by total internal reflection, this is not essential to the invention, and actually some loss of light which serves to illuminate the light pipe is preferred.

Preferably the base of the light conduit is broader than the light pipe. The base may comprise four legs projecting radially from the light pipe and equally angularly spaced. A lower face of the base may be planar, abutting a complementary surface inside the lower end of the cavity.

Preferably the finial is translucent. The finial may be integral with the light pipe or a separate element. The finial may comprise a concavity, a volume of liquid is disposed within the concavity; and a plurality of particles having light reflective surfaces are disposed within the volume of liquid in the concavity.

The body may be cylindrical and the finial flame-shaped and protruding from an upper end of the body, such that the lighting ornament resembles a candle. The body may be shaped like a teapot with a handle and opposing spout and the finial protruding from a lid of the teapot. The body may be bowl shaped, the light pipe stem-shaped and the finial shaped as the head of a flower, or a spherical form.

Preferably the liquid is water and the particles are coloured polystyrene microspheres of between 0.2 and 2 micrometres in diameter, in the amount of about 1%.

In another aspect the invention provides a display device comprising an illumination apparatus and the lighting ornament of claim 1 wherein the display device comprises a support upon which the lower end of the body of the lighting ornament may rest and lamps for directing light up through the lower end of the body.

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Brief Description of the Drawings

Preferred forms of the present invention will now be described by way of example with reference to the accompanying drawings, wherein:

Figure 1 is a schematic section in a central upright plane through a light ornament according to a first embodiment of the invention;

Figure 2 is section AA from Fig. 1;

Figure 3 is a side elevation of a light conduit of the light ornament of Fig. 1;

Figure 4 is a schematic section in a central upright plane through a light ornament according to a second embodiment of the invention;

Figure 5 is a schematic section in a central upright plane through a light ornament according to a third embodiment of the invention; and

Figure 6 is a schematic section in a central upright plane through a light ornament according to a fourth embodiment of the invention.

Description of the Preferred Embodiments

Referring to Figs 1-3, which illustrate a first embodiment of the invention, a light

ornament 10 resembling a candle may comprise a light conduit 11 received in a transparent cylindrical body 12 and both formed of crystal glass. The light conduit 11 (shown separately in Figs 2 and 3) comprises a light pipe 13 having a first, lower end to which is fixed a translucent base 14 and an opposing second end holding a flame-shaped finial 15 that protrudes from an upper end of the body 12.

Figures 1 and 2 illustrate the invention in use, where it is illuminated from below by an illumination apparatus comprising lamps 16 arranged in a circular array about an axis 17 which may be approximately coaxial with an upright axis 18 of the light ornament 10. A lowermost abutting surface 19 of the body is planar and rests upon a complementary planar surface 20 of the illumination apparatus, such that the lamps 16 are disposed proximate the abutting surfaces 19, 20. In this manner heat from the lamps 16 may be dissipated through the light ornament 10.

A cavity 22 formed in the body 12 may be bounded by walls 23 and a closed lower end 24, and with an open upper end 25. The walls 23 may be frustoconical and tapered at a small angle in the axial direction to narrow toward the lower end 24, allowing the light conduit 11 to be dropped into the cavity 22 so that the walls 23 locate the base 14 and the lower end supports the base 14. Assembled in this way, an annular section of the cavity 22 about the light pipe 13 holds a volume of liquid in which are dispersed small particles, preferably coloured polystyrene microspheres of between 0.2 and 2 micrometres in diameter. An annular closure (not shown) may close the open upper end 25.

The light pipe 13 may be formed of solid crystal glass and circular in cross-section, as best seen in Fig. 2. The base 14 of the light conduit 11 is broader than the light pipe 13, providing support but also to help direct light from the lamps 16 into the light

pipe 13 while not blocking the path for direct light transmission through the lower end of the body into the cavity 22. The base 14 may be generally cross-shaped in cross-section, comprising four like legs 28 projecting radially from the light pipe and equally angularly spaced. A lower face 29 of the base 14 may be planar, abutting the
5 complementary planar surface 24 inside the lower end of the cavity 22.

The flame-shaped finial 15 may be translucent and integral with the light pipe 13. The finial 15 may be formed of red or orange coloured glass. In use, light from the lamps 16 passes through the lower end into the cavity for illuminating the cavity 12 and the liquid and particles therein and into the light conduit for transmitting light to
10 the finial 15 that, combined with movement of the ornament 10 or flashing of the lamps 16, creates flickering colour in the finial 15 that emulates a real flame.

Fig. 4 illustrates a light ornament 110 of a second embodiment of the invention, having light conduit 111 received in a transparent body 112 shaped like a teapot, with a handle 30 and opposing spout 31, and both formed of crystal glass. The light
15 conduit 111 comprises a light pipe 113 fixed a translucent base 114. The finial 115 comprises a knob 32 in the form of a tiger-head that is fixed to a closure 33 that closes close the open upper end 125, abutting the upper end of the light pipe 113. The light pipe 113 and base 114 comprising the light conduit 111 may be integral with the teapot-shaped body 112. The closure 33 may be fused to the body 112. A small
20 fill duct, and parallel vent duct (not shown) may extend through the closure 33 into the cavity 122 for filling the cavity with the liquid / particle suspension in the factory.

Illuminated in the same manner as the first embodiment, the lower end of the body 112 rests on planar surface 20 through which light is transmitted from the array of lamps 16 into the cavity 122 for illuminating the cavity 112 and the liquid and

particles therein and into the light conduit 111 for transmitting light to the finial 115. In use, light from the lamps 16 passes through the lower end into the cavity for illuminating the cavity 122 and the liquid and particles therein and into the light conduit 111 for transmitting light to the finial 115 that, combined with movement of the ornament 110 or flashing of the lamps 16, creates flickering colour in the finial 32 that emulates a growling tiger..

As seen in Fig. 5, in a third embodiment of the lighting ornament 210 the light conduit 211 comprises a light pipe 213 having its lower end fixed to a circular translucent base 214. A finial 215 at the upper end has a sculptural form, such as a flower, and like the first embodiment, the light conduit 211 and finial 215 may be integral. The transparent body 212 is bowl-shaped providing an upwardly-opening cavity for receiving the light conduit 211 and the liquid holding the particles with light reflective surfaces.

The finial 215 may comprise a concavity 40 holding a volume of liquid wherein a plurality of particles having light reflective surfaces are disposed within the volume of liquid in the concavity 40. A small fill duct 45 and parallel vent duct 46 extend into the concavity 40 for filling it with the liquid / particle suspension.

In addition to the light conduit 211, the ornament may include multiple light conduits 211a to 211g making, for instance, a total of eight light conduits each having a light pipe 213, 213a to 213g positioned for registration with one of the lamps 16. A finial 215, 215a-215g at the upper end of each light pipe, in use, glows under the illumination of light from the lamps 16 which is transmitted through the light pipe of each finial.

A fifth embodiment of the invention, shown in Fig. 6 differs from the fourth

embodiment in the form of the finials, which in this embodiment are spherical.

Aspects of the present invention have been described by way of example only and it should be appreciated that modifications and additions may be made thereto without departing from the scope thereof.

CLAIMS:

1. A lighting ornament including
 - a light conduit comprising a light pipe having opposing first and second ends, with a translucent base at the first end;
 - 5 a finial at the second end;
 - a transparent body with a cavity holding the light conduit, the cavity bounded by walls and a closed lower end;
 - a volume of liquid disposed within the cavity between the base and walls of the cavity and the light pipe; and
 - 10 a plurality of particles having light reflective surfaces, preferably blue or red in colour, disposed within the volume of liquid in the cavity;
 - whereby the lower end of the body is adapted to sit upon an illumination apparatus such that light from the illumination apparatus passes through the lower end into the cavity for illuminating the cavity and the liquid and particles
 - 15 therein and into the light conduit for transmitting light to the finial.
2. The lighting ornament of claim 1 wherein the light pipe is circular in cross-section.
3. The lighting ornament of claim 1 or claim 2 wherein the light pipe is formed of transparent material, most preferably crystal glass.
- 20 4. The lighting ornament of any one of the preceding claims wherein the light pipe

is formed of solid material.

5. The lighting ornament of any one of the preceding claims wherein the base of the light conduit is broader than the light pipe.
6. The lighting ornament of claim 5 wherein the base comprises legs projecting radially from the light pipe and equally angularly spaced.
7. The lighting ornament of any one of the preceding claims wherein a lower face of the base is planar, abutting a complementary surface inside the lower end of the cavity.
8. The lighting ornament of any one of the preceding claims wherein the finial is translucent.
9. The lighting ornament of any one of the preceding claims wherein the finial comprises a concavity, a volume of liquid is disposed within the concavity; and a plurality of particles having light reflective surfaces, preferably blue or red in colour, are disposed within the volume of liquid in the concavity.
10. The lighting ornament of any one of the preceding claims wherein the body is cylindrical and the finial flame-shaped and protruding from an upper end of the body, such that the lighting ornament resembles a candle.
11. The lighting ornament of any one of the claims 1 to 9 wherein the body is shaped like a teapot with a handle and opposing spout and the finial protruding from a lid of the teapot.
12. The lighting ornament of any one of the claims 1 to 9 wherein the body is bowl shaped, the light pipe stem-shaped and the finial shaped as the head of a

flower, or a spherical form.

13. The lighting ornament of any one of the claims 1 to 9 wherein the particles are coloured polystyrene microspheres of between 0.2 and 2 micrometres in diameter.

5 14. A display device comprising an illumination apparatus and the lighting ornament of any one of the claims 1 to 13 wherein the display device comprises a support upon which the lower end of the body of the lighting ornament may rest and lamps for directing light up through the lower end of the body.

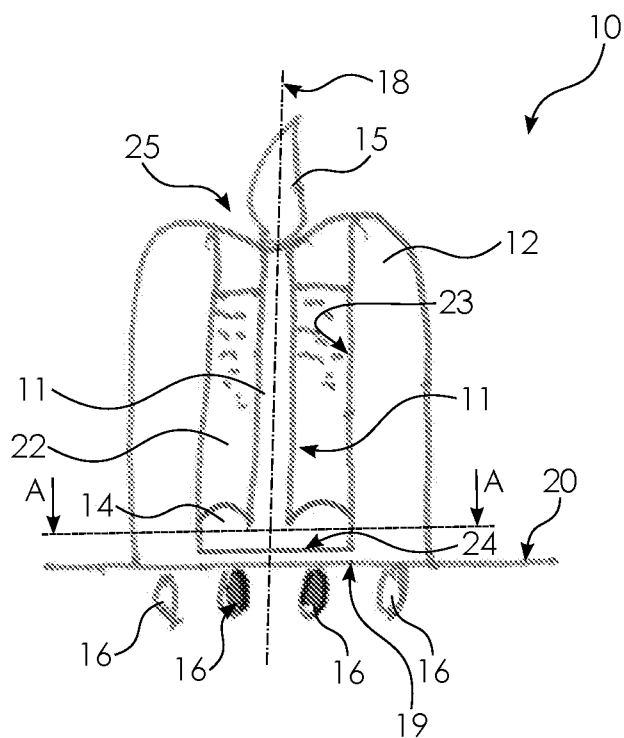


FIG. 1

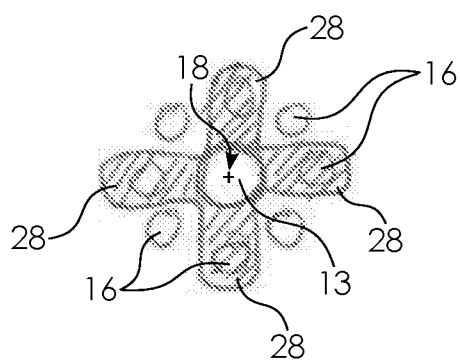


FIG. 2

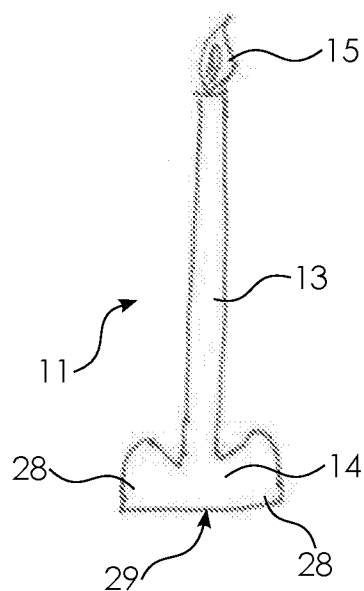


FIG. 3

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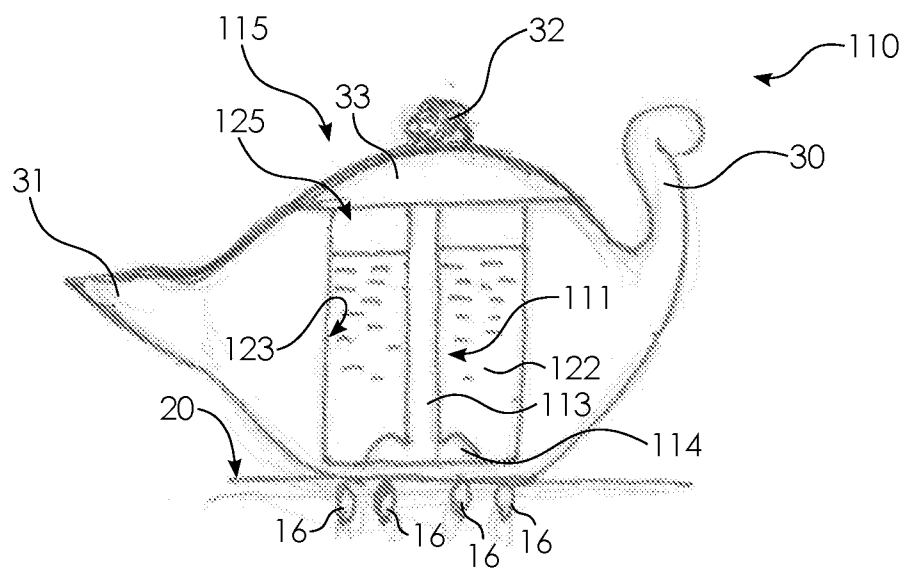


FIG. 4

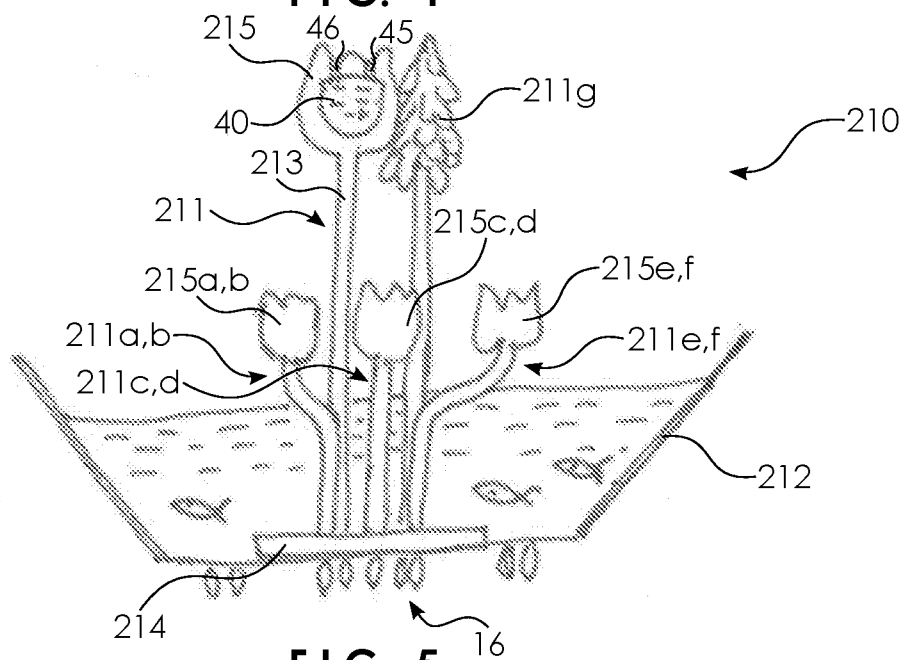


FIG. 5

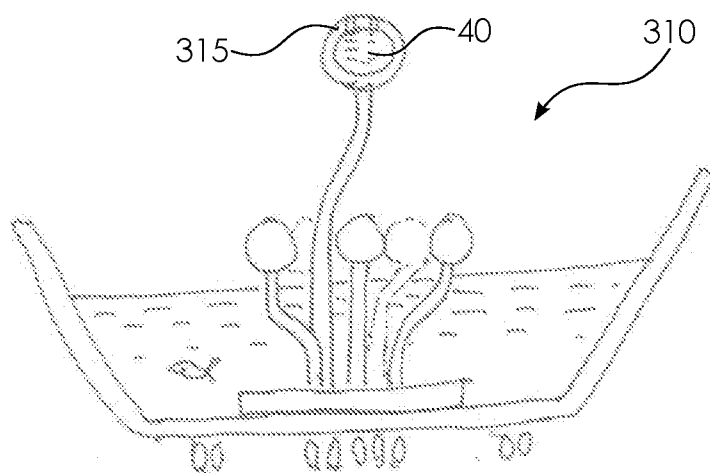


FIG. 6