

STRUCTURE WITH LIGHT FOR ILLUMINATING FUNERARY URNS HOUSED THEREIN

BACKGROUND OF THE INVENTION

1. Field of Invention

5 The invention relates to columbaria and more particularly to such a columbarium having a structure with a light arrangement for illuminating funerary urns housed therein.

2. Description of Related Art

Conventionally, a funerary urn is used to hold a deceased's cremated remains.
10 An urn is typically stored in one of a plurality of compartments (i.e., niches) of a columbarium. The compartment typically has a hinged door which can be opened for storing or removing an urn. Further, a picture of the deceased is typically placed on the door.

But this is unsatisfactory for the purpose for which the invention is concerned for
15 the following reason: There is no light provided in the compartment. Thus, the need for improvement still exists.

SUMMARY OF THE INVENTION

It is therefore one object of the invention to provide a columbarium having a structure with a light arrangement for illuminating funerary urns housed therein.

20 The above and other objects, features and advantages of the invention will become apparent from the following detailed description taken with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of a wall portion (i.e., a niche structure) of a preferred
25 embodiment of columbarium according to the invention;

FIG. 2 is a perspective view of a unit of the niche structure;

FIG. 3 is an exploded view of FIG. 2;

FIG. 4 is a perspective view of the box of FIG. 3 where the outer door is open;

FIG. 5 is a perspective view of the box of FIG. 4 where the outer door is detached;

FIG. 6 is an enlarged view of FIG. 5 with the outer door removed;

FIG. 7 is a perspective view of the outer door of FIG. 6;

5 FIG. 8 is an exploded view showing the inner frame of the outer door of the box to be assembled with the circuit member, the transparent plate, and the outer frame;

FIG. 9 is a longitudinal sectional view of the assembled outer door of FIG. 8;

FIG. 10 is a perspective view of a plurality of units of the niche structure;

10 FIG. 11 is a perspective view of the assembled illumination assemblies around raised edges on the niche;

FIG. 12 is an exploded view of FIG. 11;

FIG. 13 is a perspective view of the illumination assembly;

FIG. 14 is an exploded view of the illumination assembly;

FIG. 15 is a longitudinal sectional view of the assembled illumination assembly of

15 FIG. 15 showing the illumination assembly being in use;

FIG. 16 is a top plan view of FIG. 15;

FIG. 17 is another perspective view of the niche structure;

FIG. 18 is an exploded view of FIG. 17 with the units of the niche structure removed;

20 FIG. 19 is an exploded view of FIG. 18 with the retaining members of the niche structure removed;

FIG. 20 is an exploded view of FIG. 19 with the transverse tubes removed;

FIG. 21 is an exploded view of FIG. 20 with the fastening members removed;

FIG. 22 is a side elevation of an upper portion of FIG. 21;

25 FIG. 23 is a perspective view of the top tube of FIG. 22;

FIG. 24 is an exploded view of FIG. 23;

FIG. 25 is a perspective view of the longitudinal tube of FIG. 21;

FIG. 26 is an exploded view of FIG. 25;

FIG. 27 is a side elevation of the threaded fastener;

FIG. 28 is a perspective view of the bottom tube;

FIG. 29 is a perspective view of the retaining member;

5 FIG. 30 is a perspective view of the retaining member, the transverse tube, and the longitudinal tube assembled together;

FIG. 31 is a perspective view of another configuration of the retaining member;

FIG. 32 is a perspective view of the retaining member of FIG. 31, the transverse tube, and the longitudinal tube assembled together;

10 FIG. 33 is a perspective view of the box fitted in the illumination assembly with an urn being shown in dash line; and

FIG. 34 is a view similar to FIG. 33 where the outer door of the box has been mounted and is open.

DETAILED DESCRIPTION OF THE INVENTION

15 Referring to FIGS. 1 to 34, a portion of a wall of a columbarium 1 in accordance with a preferred embodiment of the invention comprises the following components as discussed in detail below.

A niche structure is formed by a support assembly A1 which is in turn mounted on the wall of the columbarium 1. The niche structure is a grid structure having a plurality
20 of square niches.

A plurality of eight-sided illumination assembly 3 each is provided around a niche of the niche structure. The eight-sided illumination assembly 3 comprises an open casing 31 having eight side walls 311 and a plurality of parallel groups of a plurality of longitudinally disposed brackets 312 on an inner surface of the casing 31; a mirror 32
25 supported by the brackets 312 spaced from the bottom of the casing 31; a transparent plate 33 supported by the brackets 312 spaced above the mirror 32; a brown glass member 34 supported by the brackets 312 spaced above the transparent plate 33, the

brown glass member 34 having a reflecting surface on a top surface; a dark glass member 35 supported by the brackets 312 spaced above the brown glass member 34; a transparent protective glass member 351 provided on the dark glass member 35 for protection; a flexible bundle of plastic optical fibers 36 through the casing 31 and the mirror 32 to terminate at the bottom of the transparent plate 33; and a light source (e.g., light bulb) 37 disposed below the casing 31.

Light emitted by the light source 37 will pass along the bundle of optical fibers 36 to impinge upon the bottom of the transparent plate 33 to form a plurality of light spots thereon. The bright light spots may slightly lose its brightness due to the provision of both the brown glass member 34 and the dark glass member 35. As a result, a starry night effect is brought about.

The rectangular support assembly A1 comprises a top tube A2 of rectangular cross-section, a bottom tube A4 of rectangular cross-section, a plurality of parallel longitudinal tubes A3 having one ends fastened at the bottom tube A4, a plurality of parallel transverse tubes A5 of rectangular cross-section extending through the longitudinal tubes A3 from side to side, a plurality of threaded fasteners A6 each securely interconnecting the top tube A2 and one of the longitudinal tubes A3 under the top tube A2, a plurality of retaining members A7, and a plurality of fastening members A8. Each component is discussed in detail below.

A plurality of equally spaced threaded holes A91 are formed on a bottom of the top tube A2. The threaded fasteners A6 each has a threaded one end A61 driven through a nut A92 and the threaded hole A91 and the other threaded end A61 driven through a nut A92 and a threaded hole A91 on a top of the longitudinal tube A3. Thus, the top tube A2 is disposed above the longitudinal tubes A3. Also, the distance between the top tube A2 and the longitudinal tubes A3 can be adjusted depending on height of the wall of the columbarium 1.

One configuration of the retaining member A7 is shown in FIGS. 29 and 30. The

retaining member A7 is a cross-shaped hollow member and has a positioning rod A71 having inner threads extending from a center of an outer surface.

Another configuration of the retaining member A7 is shown in FIGS. 31 and 32. The retaining member A7 is a T-shaped hollow member and has a positioning rod A71 having inner threads extending from a center of a joining portion of T on an outer surface. The longitudinal tubes A3 of U section each comprises a plurality of equally spaced rectangular cuts A93 along either edge facing outward.

The tubes described above may have other cross-sections in other embodiments.

The bottom tube A4 is urged against bottom cuts A94 of the longitudinal tubes A3.

The transverse tubes A5 each is urged against the cuts A93 of the same elevation. The cross-shaped retaining members A7 each is provided on a joining point of the longitudinal tube A3 and the transverse tube A5 but not in the four edges (see FIG. 30). The T-shaped retaining members A7 each is provided on a joining point of the longitudinal tube A3 and the transverse tube A5 in the four edges (see FIG. 32). One configuration of the fastening member A8 is for securing a joining point of the top tube A2 and the longitudinal tube A3 to the ceiling of the columbarium 1 and another configuration of the fastening member A8 is for securing the bottom tube A4 to the supporting ground (see FIG. 19).

Four externally threaded shanks 51 are provided on four corners of the niche respectively. Four threaded nuts 52 each is driven onto one end of the externally threaded shank 51. The externally threaded shanks 51 each is driven into the inner threads of the positioning rod A71 to secure two adjacent ones of the illumination assemblies 3 together with one side wall 311 of the illumination assembly 3 and one side wall 311 of the adjacent illumination assembly 3 being urged against. As a result, the illumination assemblies 3 are fastened around the niche.

A plurality of boxes 4 each is fitted in the niche having four illumination assemblies 3 assembled therearound as edges. The box 4 is a rectangular container

for storing an urn 6 and comprises a rear wall (not shown), four side walls 41, a hinged outer door 42, and a hinged inner door 411. Two hinges 414 are provided on a top corner and a bottom corner on the same side of the box 4. The outer door 42 is installed on the box 4 by mounting two hinge pins (not numbered) with the hinges 414 and a corresponding hinge member 4212 of the outer door 42. An on/off switch 412 is provided on a front bottom edge of the box 4 and is electrically connected to the light source 37. A plurality of contacts 413 are provided besides the on/off switch 412 and are electrically connected to a power source (not shown) of the box 4.

The square outer door 42 comprises, from inward to outward, an inner frame 421 having a plurality of contacts 4211, a circuit member 422 having a plurality of LED (light-emitting diode) members 4221 mounted therearound and electrically connected to the contacts 4211, a transparent plate 423, and an outer frame 424. The transparent plate 423 is formed with a statue (not numbered) thereon by carving. The transparent plate 423 is made of crystal, acrylic resin, polymethyl methacrylate (PMMA) (also known as acrylic glass), or glass. The circuit member 422 is flexible and is closed. The circuit member 422 is mounted on the inner frame 421. The transparent plate 423 is fitted in a recessed portion of the inner frame 421 with the circuit member 422 mounted therearound. The outer frame 424 is put on the inner frame 421. The LED members 4221 may emit light inward (i.e., toward the transparent plate 423).

A person may open the outer door 42 to close the on/off switch 422 in order to energize the light source 37. As a result, the light source 37 emits light to illuminate the storage space of the box 4. The lit box 4 can facilitate a removal an urn 6 therefrom or a storage of the same therein.

To the contrary, the person may close the outer door 42 onto the inner door 411. As such, the contacts 4211 contact the contacts 413 to close a circuit. As such, the LED members 4221 are energized by the power source of the box 4 to emit light toward the transparent plate 423.

While the invention herein disclosed has been described by means of specific embodiments, numerous modifications and variations could be made thereto by those skilled in the art without departing from the scope and spirit of the invention set forth in the claims.

WHAT IS CLAIMED IS:

1. A niche structure of a columbarium comprising:

a plurality of illumination assemblies comprising an open casing, a mirror spaced from bottom of the casing, a transparent plate spaced from the mirror, a brown glass member spaced from the transparent plate, the brown glass member having a reflecting surface, a dark glass member spaced from the brown glass member, a flexible bundle of optical fibers through both the casing and the mirror to terminate at bottom of the transparent plate, and a light source spaced from the casing;

a grid shaped support assembly for forming a plurality of rectangular niches each surrounded by the illumination assemblies fastened therearound; and

a plurality of boxes each for storing an urn and removably disposed in the niche, wherein light emitted by the light source passes along the bundle of optical fibers to impinge upon the transparent plate to form a plurality of light spots thereon, and the light spots are dimmed by both the brown glass member and the dark glass member.

2. The niche structure of claim 1, wherein the illumination assembly has eight side walls.

3. The niche structure of claim 1, further comprising a transparent protective glass member disposed on the dark glass member.

4. The niche structure of claim 1, further comprising a plurality of parallel groups of a plurality of brackets on an inner surface of the casing, the brackets being adapted to support the mirror, the transparent plate, the brown glass member, and the dark glass member in a spaced configuration.

5. The niche structure of claim 1, wherein the box comprises a hinged door including an inner frame having a peripheral recess and a plurality of first contacts, a rectangular circuit member mounted on the inner frame, the circuit member including a plurality of LED (light-emitting diode) members mounted therearound and electrically connected to the first contacts, a transparent plate member fitted onto the

recess of the inner frame, and an outer frame put on the inner frame, the niche structure further comprising a switch disposed on a front bottom edge of the box and electrically connected to the light source, and a plurality of second contacts disposed besides the switch such that either opening the door will close the switch to cause the light source to emit light to illuminate inside of the box or closing the door will electrically connect the first contacts to the second contacts by contacting to cause the LED members to emit light toward the transparent plate member.

6. The niche structure of claim 5, wherein the transparent plate member is formed of crystal.

7. The niche structure of claim 5, wherein the transparent plate member is formed of glass.

8. The niche structure of claim 5, wherein the transparent plate member is formed of acrylic resin.

9. The niche structure of claim 5, wherein the transparent plate member is formed of polymethyl methacrylate (PMMA).

10. The niche structure of claim 5, wherein the circuit member is flexible.

11. The niche structure of claim 2, wherein the support assembly comprises:

a top tube;

a bottom tube;

a plurality of longitudinal tubes each having one end fastened at the bottom tube, a bottom cut with the bottom tube being urged against, and a plurality of equally spaced longitudinal cuts;

a plurality of transverse tubes each extending through the longitudinal cuts of the same elevation of the longitudinal tubes from side to side;

a plurality of threaded fasteners each adjustably interconnecting the top tube and one of the longitudinal tubes;

a plurality of hollow first retaining members of cross-shaped and having a

positioning rod with inner threads extending from a center of an outer surface;

a plurality of hollow second retaining members of T-shaped and having a positioning rod with inner threads extending from a center of a joining portion of the T on an outer surface;

5 a plurality of first fastening members for securing a joining point of the top tube and the longitudinal tube to a ceiling of the columbarium;

a plurality of second fastening members for securing the bottom tube to the supporting ground; and

10 a plurality of groups of four externally threaded bolts wherein each of the externally threaded bolts of each group is driven through one of four corners of the niche into the inner threads of the positioning rod to secure two adjacent ones of the illumination assemblies together with one side wall of the illumination assembly being urged against one side wall of the adjacent illumination assembly.