I/We, being the person/s identified below as the Applicant, request the grant of a patent to the person/s indicated below as the Nominated Person/s, for an invention described in the accompanying standard complete specification.

Full application details follow.

Applicant/s and Nominated Person/s:
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Invention Title:
Support structure having built-in light source

Name/s of actual inventor/s: (optional)
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BASIC CONVENTION APPLICATION/S DETAILS:
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Hirotsugu Suzuki
By Patent Attorneys
ARTHUR S. CAVE & CO.

HECTOR CUMMING, PTMA

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REPRINT OF RECEIPT
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1. A support structure having a built-in light source, comprising:
   a support for an object;
   a switch provided at a fixed position in said support;
   a recess formed in the upper portion of said support on which said object is to be placed;
   a light source provided at the bottom of said recess;
   an electrical wire connecting said switch with said light source;
   a convex lens provided at an upper position of said recess; and
   a transparent flat member disposed above said convex lens at the same height as the upper surface of said support.
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ORIGINAL

COMPLETE SPECIFICATION

STANDARD PATENT

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Invention Title: Support structure having built-in light source

The following statement is a full description of this invention, including the best method of performing it known to me:-
BACKGROUND OF THE INVENTION

Field of the Invention

The present invention relates to a support structure for an object that has a built-in light source.

Description of the Related Art

Hitherto, certain objects have been illuminated with light cast from above or oblique to the object, so as to show them to be beautiful, and then to produce some stage effect. In this lighting, light is projected not only onto the object itself but also on the periphery thereof so that the object and the periphery, in combination or as a whole, define an area having the object as the center of attention and offering a beautiful atmosphere, which thus serves the purpose.

However, projecting light from above or obliquely in order to show the object to be beautiful can be disadvantageous because of the illumination of not only the object itself but also the periphery. That is, it has been impossible to show the inherent glittering quality of objects themselves.

This is particularly true when light is projected downward or obliquely onto an object such as a cocktail glass filled with a cocktail and placed on a bar counter, or a jewel placed on a display surface. Because the light cast
downward or obliquely onto the glass or jewel is diffused, the inherent glittering quality of the object cannot be shown.

SUMMARY OF THE INVENTION

An object of the present invention is to provide a support structure having a light source at a position directly below an object, such as a cocktail glass or jewel, placed on a support, so that light is projected directly upward onto the object without being diffused into the periphery. The projected light is concentrated on the object such as a cocktail glass or jewel, thereby making it possible to show the inherent glittering quality of the jewel or the glass and the cocktail contained therein.

In order to achieve this object, according to the present invention, a switch is provided at a fixed position in a support for an object; a recess is formed in the upper portion of the support on which the object is to be placed; a light source is provided at the bottom of the recess; electrical wires are provided to connect the switch with the light source; a convex lens is provided at an upper position of the recess; and a transparent flat member is disposed above the convex lens at the same height as the upper surface of the support.

The effect achieved is even better if the support is a bar counter or table; the convex lens has a diameter of 1.6
cm; the light source is a miniature bulb; and/or the transparent flat member is a sheet of glass.

When an object such as a jewel or a cocktail glass containing a cocktail is placed on the support, and light is projected directly upward from below, the convex lens prevents the light from diffusing, allowing the light to be cast only onto the jewel or the glass and the cocktail, thereby showing the inherent glittering quality and beauty of the object.

In order to achieve even better effects, the convex lens should have a diameter of 1.6 cm because lenses of a greater diameter fail to concentrate the light; and miniature bulbs should be used as the light source. The use of a bar counter or a table also assures a better effect.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a view of a support structure having a built-in light source according to an embodiment of the present invention;

Fig. 2 is an enlarged view of a part of the support structure on which an object is to be placed; and

Fig. 3 is a view similar to Fig. 1, also showing objects placed on the support of the support structure.

DESCRIPTION OF THE PREFERRED EMBODIMENT

An embodiment of the present invention will now be described with reference to the drawings. In the illustrated
embodiment, the support structure has a support 4 for objects which consists of a bar counter. However, the support of the support structure according to the present invention may be any support for an object or objects, and a table for supporting jewels or tableware is a suitable example. The object or objects to be placed on the support may be any light-transmitting object(s), and suitable examples include, not only cocktail glasses and jewels, but also decorative objects made of glass and glasses for containing juice, etc.

As shown in Figs. 1 and 3, switches 5 are provided at fixed positions in the support 4, and are turned on when light is to be projected, and are turned off when not needed. Recesses are provided in the upper portion of the support 4, or the counter, on which the objects, such as cocktail glasses, are to be placed. In the illustrated embodiment, these recesses are on that side of the counter where people may be seated enjoying their drinks, that is, on the opposite side of the switches 5. A miniature bulb 2, serving as the light source, is provided at the bottom of each of the recesses. Each of the switches 5 is connected with the miniature bulb 2 by electrical wires 7, and the wires 7 are passed through cavities 8 in the support 4, as shown in Figs. 1 and 2. A convex lens 1 is provided at an upper position of each of the recesses. When the support 4 is a bar counter, a proper diameter of the lens 1 is 1.6 cm in order to prevent
diffusion of the light projected from the bulb 2. Further, a transparent flat member 3 is disposed above each of the recesses at the same height as the upper surface of the support 4. The transparent flat member 3 is preferably a sheet of glass. Objects, such as cocktail glasses 6, are placed on the support 4 as shown in Fig. 3.

By virtue of the above-described construction of the support structure according to the present invention, it is possible to project light directly upward onto an object, such as a cocktail glass or jewel, from a position directly below it, and to concentrate the light only on the object. As a result, if the object is a glass or jewel, it can be more effectively shown to be beautiful by allowing the object to glitter to an extent which has not conventionally been possible. Even the foam in a glass of beer will glisten when illuminated in this manner. Thus, light projected upward onto such an object from a position directly below it, concentrated on it, and transmitted through it allows the inherent glittering quality of the object, such as a container and its liquid contents, to be shown.
The claims defining the invention are as follows:
1. A support structure having a built-in light source, comprising:
   a support for an object;
   a switch provided at a fixed position in said support;
   a recess formed in the upper portion of said support on which said object is to be placed;
   a light source provided at the bottom of said recess;
   an electrical wire connecting said switch with said light source;
   a convex lens provided at an upper position of said recess; and
   a transparent flat member disposed above said convex lens at the same height as the upper surface of said support.
2. A support structure according to claim 1, wherein said support is a bar counter or table.
3. A support structure according to claim 1, wherein said convex lens has a diameter of approximately 1.6 cm.
4. A support structure according to claim 1, wherein said light source is a miniature bulb.
5. A support structure according to claim 1, wherein said transparent flat member is a sheet of glass.
6. A support structure having a built-in light source, substantially as herein described with reference to the accompanying drawings.
7. A method of illuminating an object, substantially as herein described.

DATED this 10th day of September, 1991.

HIROTSUGU SUZUKI
By His Patent Attorneys
ARTHUR S. CAVE & CO.