

ADJUSTABLE 3D MULTICOLOR WAVE GENERATORE SYSTEM

FIELD OF THE INVENTION

The present invention relates generally to entertainment purpose lighting systems. More particularly, it relates to an adjustable 3D multicolor wave generator system comprising a light source and a color filtering means which varies the color of the light.

BACKGROUND OF THE INVENTION

Unlike most disco lighting systems the present invention is not limited to stage use, and can be used in homes or businesses. The present invention can operate in under 0.4 square meters, with heights from 1 to 25 meters.

Presently there is a large market for new and exotic lighting effects. Most of the lighting effects are limited to two dimensions (2D). Laser lighting can simulate three dimensions (3D), but the involved costs are usually high. It is known driven rotating arrangements like that disclosed in GB 2,239,307 in which making the light source rotated and changing color by rotating filter means is done in a pseudo-random manner. This is not suitable to provide dedicated light effect with well separated parts of visual fields.

SUMMARY OF THE INVENTION

It is a primary object of the invention to create a real 3D wave column shape, and simultaneously to illuminate it to complete the visual effect.

It is also an object of the invention to create a color filtering means capable of changing the color of output light 450 times per second.

It is an additional object of the invention to create a holder for a cord so as to permit free movement of the cord and to minimize the abrasion of the cord.

It is an additional object of the invention to create a system safe for human interaction.

It is an additional object of the invention to create a control interface.

In accordance with the above aspects of the invention the system of the opening paragraph is furthermore comprising a cord which is attached by its first end to a holder which permits the free rotation of the cord within itself and serves as a fixed point for the wave generating rotating of the cord; the second end of the cord is attached to a driven disc rotating the cord at a given radial distance from its center of rotation.

The present invention can even be operated by remote control to enhance the user's or viewer's experience. It can even be touched to further manipulate its shape.

Other objects, features, and advantages of the invention will become apparent to those skilled in the art from the following detailed description and the accompanying drawings. It should be understood, however, that the detailed description and specific examples, while indicating preferred embodiments of the present invention, are given by way of illustration and not of limitation. Many changes and modifications may be made within the scope of the present invention without departing from the spirit thereof, and the invention includes all such modifications.

BRIEF DESCRIPTION OF THE DRAWINGS

Preferred exemplary embodiments of the invention are illustrated in the accompanying drawings in which like reference numerals represent like parts throughout, and in which:

FIG. 1 is a schematic illustration of the entire invention in operation;

FIG. 2 is a schematic illustration of the base unit's functions;

FIG. 3 is a cross-section view taken along line A—A of FIG 2;

FIG. 4 is a schematic illustration of the cord holder;

FIG. 5 is a cross-section view taken along B—B of FIG. 4.

DESCRIPTION OF THE PREFERRED EMBODIMENT

The apparatus consists of three units: a base unit, a cord holder and cord. The cord connects the base unit to the cord holder. The rotating disc of the base unit spins the cord to create a 3D wave. After passing through a color filter the lights illu-

minate the cord to create the multicolor effect. The cord is lit in such a way as to maximize its luminance and minimize the illumination of its surroundings.

Referring now to the drawings, and particularly FIG. 1 an adjustable 3D multicolor wave generator 1 is adaptable for indoor or outdoor operation as: 1) a home mood lighting effect, 2) a disco lighting effect, 3) an educational tool, or 4) a promotional tool for businesses. The adjustable 3D multicolor wave generator (1) consists of three coupled parts: a base unit 2, a cord holder 4, and a cord 3. The cord 3 is linked between the base unit 2 and the cord holder 4 as to allow enough slack for itself to revolve and generate a 3D wave form. During operation the cord holder 4 remains fixed and stationary and allows the free movement of the cord 3 within it. The cord 3 is also attached to the rotating disc 7 via any of the holes made in the disc. The cord 3 is made of a highly reflective, durable, and flexible material, and its diameter is slightly smaller than the hole of the cord holder 4.

Referring to FIG. 2 and FIG. 3, the base unit 1 consists of at least one light source 5, driving motors 6, a clear transparent disc 7 and a color disc 8, a mirror 9 and electronic circuitry, which latter is not illustrated.

The light source 5 consists of 2 spot halogen bulbs chosen to give a wide enough light coverage to illuminate the entire cord 3 and to minimize the illumination of its surroundings. Preferably the motors 6 are of the speed of at least 2000 RPM, as these speeds are typically needed to generate the wave forms, and to rapidly switch the color of the light. The axle of the first motor 6 is attached directly to the clear transparent disc 7, while the other is attached directly to the color disc 8. The color disc 8 is divided into pie shaped equal sections of different colors, so its rotation changes the color of the passing light. The light sources 5 are directed to a mirror 9, which reflects the light to the spinning color disc 8. By making the aperture small enough it is possible to have individual color separation. The effect looks like a high speed multicolored strobe light. The clear transparent disc 7 was chosen in order to allow passing through the light beam. By having the colored light emanate from as close to the center of the clear transparent disc 7 as it is possible to ensure a more even light distribution over the entire wave surface.

FIG. 4 and FIG. 5 shows a cord holder 4. The cord 3 is led through the convex side of the dome of the cord holder 4, and a knot is tied on the concave side. The knot keeps the cord 3 from sliding out of the cord holder 4 but is small enough to

permit it to spin within the cord holder 4. The three holes in the cord holder 4 are provided to enable the cord holder 4 to be fixed to any surface such as a wall, roof, ceiling, floor, etc.

In operation the user can adjust the speed of rotation of the clear transparent disc 7 affecting the frequency of the wave created. The user can also adjust the intensity of the light as well as the speed of color rotation.

The apparatus for generating a multicolor and dynamic 3D wave column in its preferred embodiment can be manually or automatically adjusted. The column can operate at any angle (vertically, horizontally, or diagonally) as long as both ends are fixed with no obstacles between them. The frequency of the color filtering means, the intensity of the light source, and cord length can also be controlled automatically or manually, for example via a remote control unit.

Many changes and modifications could be made to the invention without departing from the scope and spirit thereof. The scope and features of the invention is partially discussed above, while others will become apparent from the appended claims.

CLAIMS:

1. An adjustable 3D multicolor wave generator system comprising a light source and a color filtering means which varies the color of the light, characterized in that it further comprising a cord (3) which is attached by its first end to a cord holder (4) which permits the free rotation of the cord (3) within itself and serves as a fixed point for the wave generating rotating of the cord (3); the second end of the cord (3) is attached to a driven disc (7) rotating the cord (3) at a given radial distance from its center of rotation.
2. The adjustable 3D multicolor wave generator system according to of claim 1A, wherein the light from the light source (5) is directed to a mirror (9) assembly.
3. The adjustable 3D multicolor wave generator system of claim 2, wherein the reflected light is directed to a section of a color filtering means.
4. The adjustable 3D multicolor wave generator system of claim 4, wherein the color filtering means comprising a transparent colored disc (8) with different colors for each of its pie shaped sections.
5. The adjustable 3D multicolor wave generator system of claim 1, wherein the disc (7) is made of clear transparent material and rotating at adjustable speeds to control the frequency of the wave generated by the motion of a cord (3) attached to it.
6. The adjustable 3D multicolor wave generator system of claim 1, wherein the cord (3), attached on its second end to the disc (7), is connected to a perpendicular surface through the cord holder (4) on its first end.
7. The adjustable 3D multicolor wave generator system of claim 1, wherein a highly reflective cord (3) of varying lengths is applied.
8. The adjustable 3D multicolor wave generator system of claim 1, wherein the color changing frequency of the color filtering means, the intensity of the light source, and cord length can be controlled automatically or manually via remote control.

AMENDED CLAIMS

[received by the International Bureau on 26 March 2001 (26.03.01);
original claim 1 new claim 9 added; remaining claims unchanged (1 page)]

1. An adjustable 3D multicolor wave generator system comprising a light source and a color filtering means which varies the color of the light, further comprising a cord (3) which is attached by its first end to a cord holder (4), characterized in that the cord holder (4), fixed to a solid surface, permits the free rotation of the cord (3) within itself and serves as a fixed terminal point for the wave generating rotation of the cord (3); the second end of the cord (3) is attached to a driven disc (7) rotating the cord (3) at a given radial distance from its center of rotation; the base unit (2), the cord holder (4), and the cord (3) are separately installable individual entities.
2. The adjustable 3D multicolor wave generator system according to of claim 1A, wherein the light from the light source (5) is directed to a mirror (9) assembly.
3. The adjustable 3D multicolor wave generator system of claim 2, wherein the reflected light is directed to a section of a color filtering means.
4. The adjustable 3D multicolor wave generator system of claim 4, wherein the color filtering means comprising a transparent colored disc (8) with different colors for each of its pie shaped sections.
5. The adjustable 3D multicolor wave generator system of claim 1, wherein the disc (7) is made of clear transparent material and rotating at adjustable speeds to control the frequency of the wave generated by the motion of a cord (3) attached to it.
6. The adjustable 3D multicolor wave generator system of claim 1, wherein the cord (3), attached on its second end to the disc (7), is connected to a perpendicular surface through the cord holder (4) on its first end.
7. The adjustable 3D multicolor wave generator system of claim 1, wherein a highly reflective cord (3) of varying lengths is applied.
8. The adjustable 3D multicolor wave generator system of claim 1, wherein the color changing frequency of the color filtering means, the intensity of the light source, and cord length can be controlled automatically or manually via remote control.
9. The adjustable 3D multicolor wave generator system of claim 1, wherein cords (3) of different length can be inserted to alter the shape and size of the generated wave.