Nov. 7, 1972 D. E. HAWKINS 3,702,172

LIGHT FOUNTAIN

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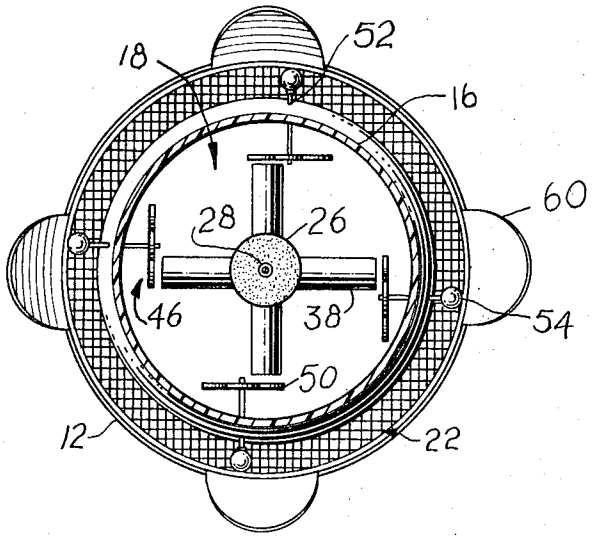


Fig. 2.

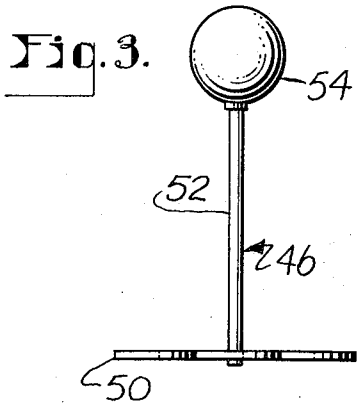


Fig. 3.

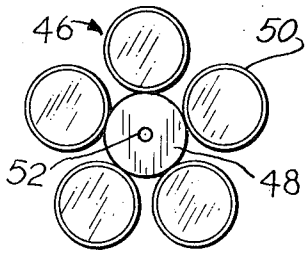


Fig. 4.

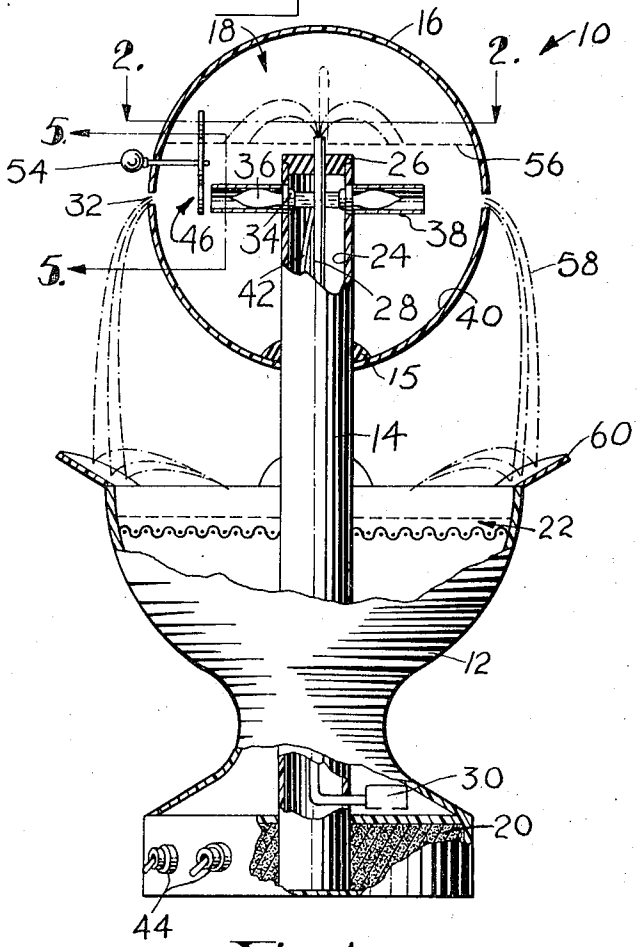


Fig. 1.

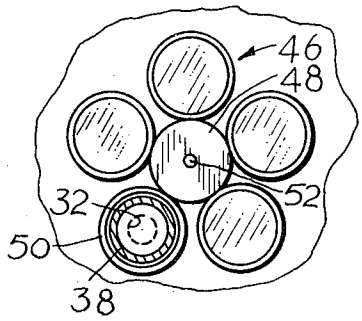


Fig. 5.

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LIGHT FOUNTAIN

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ABSTRACT OF THE DISCLOSURE

An illuminated, decorative water fountain presenting an attractive visual effect of light cascading from an elevated container of water. The interior of the container is filled with water to an operating level above apertures in the container to present a free flow, cascading discharge of water along an exterior path. A separate light source for each aperture is disposed within the interior of the container to direct light toward the associated aperture at an angle relative to the exterior path in such a manner that the water discharge effects deflection of the light along the exterior path to create a visual appearance of cascading light.

This invention relates to decorative water fountains of the type normally found in lawns, public parks, etc., and relates more particularly to those types of fountains having illuminated water discharge.

It is a primary object of the present invention to provide a fountain having an elevated container of liquid with an aperture in the container for presenting a cascading discharge of liquid therefrom and wherein is provided means within the container for illuminating the liquid discharge in a manner creating a visual effect of a cascading discharge of light, rather than a cascade of liquid, from the aperture to produce an attractive and unusual illuminated display.

Another object of the invention is to provide color illumination means of the type set forth which includes a light source that directs light from the container interior toward the aperture and the cascading discharge in a direction angularly disposed with respect to the exterior discharge path of the liquid, the discharging liquid thereby effecting deflection of the light substantially along said exterior discharge path in order to present a fountain of simple, economical, and rugged construction which produces a visual effect of the type described.

Another object of the invention is to provide a discharge coloring element disposed between the light source and the aperture, which element is provided with a plurality of translucent color panels selectively shiftable into the path of light to vary the color of said cascading discharge to further enhance the beauty and attractiveness of the illuminated display.

Another object of the invention is to provide a fountain of the class described having a sealed, hollow pedestal member projecting above a catch basin; a spherical, enclosed, container member secured to the pedestal in overlying relationship with the basin and having a plurality of apertures therein for creating a cascade or water fall from each aperture upon supplying water to the interior of the container; fixture means for accepting electric lamps in a manner positioning each lamp to direct light toward an associated aperture, the electrical connection end of each fixture means being disposed within the sealed pedestal; the interior surface of the spherical container being opaque and there being a cylindrical reflector member surrounding each of the lamps in a manner directing light from the associated source only to the associated aperture along a horizontal

line angularly disposed from the generally vertical, discharge path of liquid, so that the discharging liquid deflects the associated light substantially along the vertical discharge path in a manner creating a visual effect of cascading light.

It is another object of the invention to provide a fountain of the class described in the preceding object, electrical conductors and fluid supply means extending upwardly in the sealed hollow pedestal for respectively operating the electric lamps and delivering fluid to the interior of the container, so that the invention may be utilized with various types of fountain structures including those of the recirculating type.

Other objects and advantages of the present invention are specifically described in or will become apparent from the following detailed description of a preferred embodiment of the invention and the accompanying drawing, wherein:

FIG. 1 is a front plan view of a fountain constructed in accordance with the present invention with portions shown in cross-section to reveal details of construction;

FIG. 2 is a transverse, cross-sectional view taken along line 2—2 of FIG. 1;

FIG. 3 is an enlarged, horizontal plan view of the color disc wheel;

FIG. 4 is a vertical elevational view of the color disc wheel of FIG. 3; and

FIG. 5 is a fragmentary cross-sectional view taken along line 5—5 of FIG. 1.

Referring now more particularly to the drawing, the fountain is designated in overall construction by the numeral 10, which fountain is of the type generally found on private lawns, public parks, etc. The fountain may be quite large in construction as for public displays or, on the other hand, relatively small, economical and adapted for use by private individuals as a decorative home or lawn display. The fountain generally comprises a catch basin 12 that may be of any attractive configuration, along with an upstanding pedestal member 14 which protrudes above the catch basin into the interior 18 of a spherical container or reservoir 16 that is sealingly secured and supported upon pedestal 14 at juncture 15. The lower end of pedestal 14 is secured and affixed within the stabilizing, weighted base portion 20 of the basin disposed below the water collecting pool 22 thereof.

The pedestal 14 has a central hollow 24 therein which is sealed from fluid communication with the interior 18 of the spherical container 16 by a seal cap 26, formed from an elastomer material for instance, in a manner maintaining hollow 24 dry and substantially fluid-tight. A water supply tube or riser 28 is disposed within pedestal hollow 24 and extends through a lower wall thereof for interconnection with an electric water pump 30 or like fluid supply means. The upper end of riser 28 extends in sealing engagement through an aperture in seal cap 26 into the container interior 18.

The fountain illustrated is of the recirculating type, being provided with supply pump 30 which lifts water from collecting pool 22 into container interior 18 for subsequent escape therefrom to fall back into collecting pool 22. Various other arrangements may be utilized, such as providing a direct, continuous supply of fresh water through a hose or the like into interior 18.

Container sphere 16 is provided with apertures 32 formed in the walls thereof and disposed at substantially the same elevational height in a horizontal diametral plane passing through the geometric center of the sphere 16. Positioned in horizontal, associated alignment with each of the apertures 32 is an electrical lamp fixture 34 whose electrical connection end is disposed within the sealed hollow 24 of the pedestal. Fixture 34 is adapted to receive

a relatively high intensity light bulb **36**, for instance a high wattage type of bulb normally utilized in motion picture projectors, with each of the lamps **36** being positioned to direct illumination horizontally at the associated aperture **32**.

Surrounding each of the lights is a horizontally disposed, tubular, light reflector member **38** which presents a somewhat concentrated or narrow beam of light cast from each of the lights **36** substantially directly at the associated aperture **32**. In the preferred embodiment, the sphere **16** is enclosed and the interior surface **40** thereof is painted black or otherwise rendered opaque such that only the beam of light from the associating illuminating means reaches and emits from each of the apertures **32**.

Electrical current conducting wires **42** are provided to extend through the dry hollow **24** of the pedestal to interconnect with the inner ends of each of the lamp fixtures **34** to operate same. The conductor wires **42** may extend through the pedestal lower end and stabilizing base **20** of the catch basin, and an electrical socket (not shown) may be disposed upon this lower base **20**. In this respect, the illustrated form of the invention includes a pair of electrical toggle switches **44** upon the exterior base **20**, one of which is adapted to turn the lights **36** off and on, while the other is adapted to control operation of the electrical water pump **30**.

Disposed adjacent each of the apertures is a color disc element or color wheel **46**, each of which includes a central support disc **48** with angularly displaced and circumferentially located color panels **50**. The five color panels of each wheel **46** have translucent central portions of different color or hue so that, in the embodiment illustrated each color wheel **46** presents a selection of five colors. Each color wheel **46** has a rotatable spindle **52** secured to the central support disc **48**, which spindle **52** extends from the interior **18** of the reservoir through the wall thereof to present a handle portion **54** positioned exteriorly of reservoir **16**. Each spindle **52** is rotatably carried upon the reservoir sphere **16** in a manner presenting selective alignment of the different panels **50** with the associated lights **36** upon selective rotation of the wheel **46**. In this respect, it will be noted that the central spindle is disposed above and aside the associated aperture to effect alignment of its color panels **50** with the aperture.

In operation, the electrical water pump **30** and supply riser **28** deliver fluid to the container interior **18** to completely fill same, or at least fill the container to a level **56** above the plane containing the apertures **32** so that the latter are completely submerged. Water freely flows in a discharge **58** from each of the apertures at a rate determined by the water depth or hydrostatic pressure head at the apertures as well as the size of the apertures **32**. The shape, horizontal travel and size of discharge **58** will, of course, also vary with the water depth and aperture size. The discharge **58** from each aperture cascades downwardly generally vertically to impinge upon an associated splatter plate **60** disposed upon the lower catch basin **12**. The particular design of the fountain illustrated presents four, symmetrically disposed and identical cascading discharges **58** from a spherically shaped container **16**, each aperture being of the same size and being presented with equal water pressure. The particular design, shape and configuration of the container **16**, the positions and number of apertures provided therein as well as the design of basin **12** may be varied as desired to present pleasing eye-catching displays.

The beam of light emanating from the associated source **36** illuminates the water discharge at aperture **32** in a color determined by the color panel **50** selectively disposed within the horizontal path of light. Upon and after leaving aperture **32**, the cascading discharge **58** causes reflection and/or refraction of the light in a manner deflecting or "bending" the latter along the generally vertical path of the cascading discharge **58**. In particular, a certain amount of total internal reflection of the light within particular

droplets or streams of the discharge **58** tend to imprison the light for travel along the path of discharge **58**. Also, prismatic effects of the water, reflection and/or refraction, will tend to direct the light downwardly along the flowing discharge and cause the discharge **58** to partake of the illumination and color offered by the illumination means disposed in the interior **18** of container **16**. In sum, the consequent emanation of light from the cascading discharge **58** produces an unusual visual appearance of light—rather than water—cascading from the apertures **32**. That is, instead of appearing as a cascade of water which is bathed in illuminating light, the arrangement offered by the present invention presents an appearance of light itself cascading and discharging from aperture **32**.

In contrast to conventional type illuminated fountains which may simply bathe the water sprayed or discharged therefrom in a manner presenting the appearance of colored, illuminated discharge of water, the fountain of the present invention presents the appearance of downwardly free flowing or cascading light itself, rather than illuminated water. This appearance of "flowing" or "liquid" light is created by the color illumination means disposed within the interior of the opaque sphere **16** which directs a somewhat concentrated beam of light at the small aperture **32** that is consequently deflected from its horizontal direction to the relative vertical disposition of discharge **58**, which deflection is effected primarily by the discharge **58** itself. Conventional prismatic devices may also be utilized for further enhancement of the beautiful and striking appearance presented, though the cascading-light appearance may be fully effected without such devices.

A pronounced appearance of light emanating from the splatter plates **60** will also result as the cascading "light" discharges impinge thereupon, particularly when the impinging surface of the splatter plates are mirrored. In addition to mirrored splatter plates, the preferred form of the invention utilizes a container **16** which is both liquid-tight and opaque so that fluid and light emanates only from the apertures **32**.

The present invention thereby presents a decorative water fountain of simple, economical and reliable construction which gives forth a cascading, light display that is unusual, particularly eye pleasing, and highly attractive.

The spherical container **16**, though illustrated as an enclosed device for further enhancement of the unusual illumination display, may be open at the top end thereof or may be made in sections removable from one another to facilitate replacement of the light bulbs **36**. Also, the cylindrical reflectors **38** may be detachably or permanently affixed in sealing relationship to the pedestal member **14**, and similarly, each of the light fixtures **34** may sealingly engage the interior surface of the tubular reflectors **38** or may be formed as a single unit in conjunction with the associated reflector **38**.

These and many other alterations and modifications to the construction and design of the water fountain illustrated may be incorporated without loss of the benefits of the present invention. Accordingly, the foregoing detailed description of a preferred embodiment of the invention is to be considered exemplary in nature and not as limiting to the scope and spirit of the invention as set forth in the appended claims.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

1. In a fountain:

a container for holding a supply of liquid within the interior thereof, there being at least one aperture formed in the wall of said container to permit cascading discharge of liquid therefrom along a path exteriorly of said container;

means for supplying liquid to the interior of the container; and

means disposed within said interior for illuminating said cascading discharge upon and after escape thereof through said aperture, whereby to present a

visual appearance of light cascading from said aperture along said exterior path.

2. A fountain as set forth in claim 1, wherein said illuminating means is adapted to direct light from said interior toward said aperture and said cascading discharge in a direction angularly disposed relative to said exterior path, said cascading discharge effecting deflection of the light substantially along said exterior path to present said visual appearance of cascading light.

3. A fountain as set forth in claim 2, wherein said illuminating means includes a light fixture adapted to receive a light source, and a light reflector positioned adjacent said fixture in substantially surrounding relationship to the light source for casting the illumination of the light source directly toward said aperture.

4. A fountain as set forth in claim 3, wherein said aperture and said illuminating means are disposed in substantially horizontal alignment below the normal operating level of liquid in said interior, whereby said discharge falls from said aperture along a generally vertical exterior path and said illumination is cast substantially horizontally at said aperture to be thereupon deflected along said vertical exterior path.

5. A fountain as set forth in claim 4, wherein said container is provided with a plurality of spaced apertures disposed in a substantially horizontal plane whereby liquid pressure at each of said apertures is substantially equal, and wherein is provided separate illuminating means in said interior associated with each of said apertures to present said visual appearance of cascading light from each of said apertures along the corresponding vertical exterior paths, the interior surface of said container being non-reflective whereby each of said apertures is illuminated only by the illuminating means associated therewith.

6. A fountain as set forth in claim 4, wherein said container is enclosed and opaque whereby illumination is emitted therefrom only through said aperture.

7. A fountain as set forth in claim 3, wherein is provided: a catch basin disposed below said container for collecting said discharge; and a pedestal member projecting upwardly from said basin with an upper end disposed in said interior, said container being secured and supported upon said member in overlying relationship to said basin.

8. A fountain as set forth in claim 7, wherein said member is a sealed, hollow tubular member with said upper end thereof sealed to prevent leakage from said interior into the sealed member, said illuminating means being mounted upon said tubular member.

9. A fountain as set forth in claim 8, wherein said liquid supplying means includes a riser disposed within said sealed member and extending through said upper end of the tubular member into said interior to supply liquid thereto.

10. A fountain as set forth in claim 8, wherein said light fixture is electrically operated and is mounted upon said tubular member with one end disposed within said sealed member, and wherein is provided electrical current conducting means in said sealed member for connecting with said one end of the light fixture to operate the light source.

11. A fountain as set forth in claim 3, wherein is provided an element disposed in said interior between said aperture and said reflector, said element being provided with a translucent, colored panel through which the illumination of the light source is cast, whereby said cascading discharge partakes of the color of said panel.

12. A fountain as set forth in claim 11, wherein said element is disc-shaped and is provided with a plurality of angularly disposed, differently colored, translucent panels, said disc element being rotatable to selectively align said differently colored panels between said aperture and reflector, whereby to vary the color of said discharge.

13. A fountain as set forth in claim 12, wherein said disc element is rotatably mounted upon said container and is provided with an operating spindle extending through said container to the exterior thereof.

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