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CHANGING COLOR ILLUMINATED FOUNTAIN

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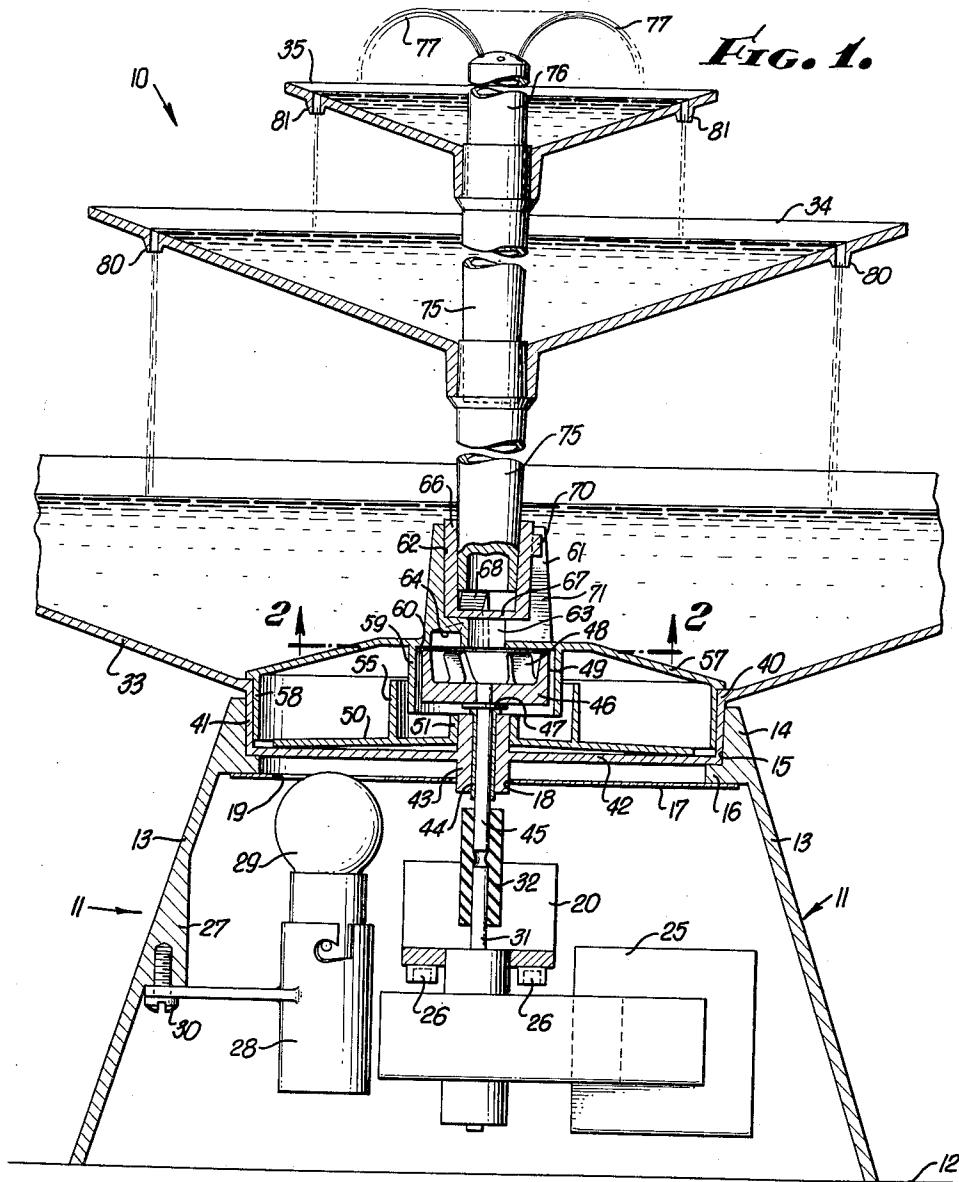


Fig. 1.

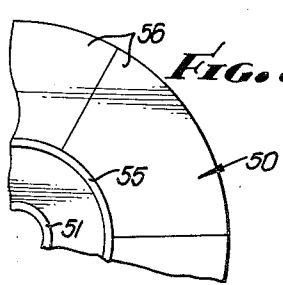


Fig. 3.

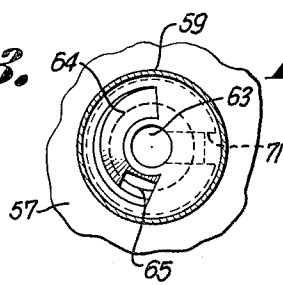


Fig. 2.

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CHANGING COLOR ILLUMINATED FOUNTAIN
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This invention relates to ornamental fountains and is an improvement on the fountain disclosed in my co-pending application Serial No. 32,937 filed May 31, 1960, now Patent No. 3,008,646 and entitled "Color Changing Illuminated Fountain."

The fountain so disclosed is adaptable for use on a table and for manufacture of molded plastic parts so that it may be shipped disassembled in the form of a kit and readily assembled and satisfactorily operated by the purchaser without the use of any tools.

It is an object of the present invention to provide an improved fountain of this type, the cost of manufacture of which is substantially less than and the performance of which is superior to that of said previously disclosed fountain.

Another object is to provide an improved color changing illuminated colored fountain having a novel color filter which is concentric with and hydraulically directly driven by the impeller of a pump for circulating water in the fountain, while said filter is immersed in water and its speed thus impeded causing it to rotate slowly, thereby producing a desirably slow rate of change in the colors with which the fountain is successively illuminated.

Another object of the invention is to provide such a fountain which may be readily disassembled and reassembled rendering it easy to keep the same clean, which is an essential characteristic in any fountain in order for it to operate properly.

The manner of accomplishing the foregoing objects as well as further objects and advantages will be made manifest in the following description taken in connection with the accompanying drawings in which

FIG. 1 is a diagrammatic fragmentary vertical sectional view of a preferred embodiment of the invention.

FIG. 2 is a fragmentary horizontal upwardly looking sectional view taken on the line 2—2 of FIG. 1.

FIG. 3 is a fragmentary plan view of the color filter disk of the fountain.

Referring specifically to the drawings, the fountain 10 disclosed therein includes an opaque plastic base 11 which is adapted to rest on a table 12 this base including a frusto-conical wall 13 which terminates at its upper end in a socket 14 having a tapered bore 15 terminating at its lower end in an annular shoulder 16 to which is secured an opaque light mask 17 having a central hole 18 and a light hole 19.

The wall 13 of the base 11 also has a pair of opposed bosses 20 formed thereon to which an electric motor 25 is secured by Allen screws 26, and a boss 27 to which the socket 28 of a lamp 29 is secured by a screw 30. This lamp is disposed in vertical alignment with hole 19 in the mask 17. When the motor 25 is so mounted its shaft 31 is coaxial with the base 11 and extends directly upwardly a rubber coupling 32 being provided on said shaft.

The fountain 10 is provided with three clear plastic bowls 33, 34 and 35, the bowl 33 having a shallow cup 40 formed centrally therein as an integral part of said bowl, said cup including a tapering sidewall 41 which is adapted to snugly fit the tapered bore 15 of the base 11, and a bottom 42 which is provided centrally with a vertical bearing 43 having a metal sleeve 44.

Journalling in sleeve 44 is a shaft 45 on the upper end of which is mounted a pump impeller 46. The shaft 45

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has a flange 47 which rests on top of the sleeve 44 and makes a liquid type seal therewith. The impeller 46 is in the form of an upwardly facing cup having helical impeller blades 48 which are shrouded by a peripheral wall 49 formed integrally therewith.

Rotatably mounted externally on the bearing 43 and enclosed within the cup 40 is a clear plastic color filter disk 50 having a central hub 51 and an upwardly extending annular flange 55. The filter disk has its marginal area outside the flange 55 divided into a circumferential series of differently colored sectors 56.

The cup 40 has a clear plastic cover 57 with a downwardly extending tapered annular flange 58 which snugly fits into the tapered sidewall 41 of the cup 40. Formed integrally with the cover 57 is a circular wall 59 which extends downwardly therefrom concentrically with the impeller 46 so as to form a pump chamber 60. Also formed integral with the cover 57 and extending upwardly therefrom is a socket 61 with a tapered bore 62, this socket having a central opening 63 for admitting water from the bowl 33 centrally into the impeller 46 and a spiral channel 64 which is opposite an eccentric portion of blades 48 and terminates in a hole 65 which extends upwardly into the bore 62. A hollow clear plastic tapered plug 66 fits snugly into the bore 62 and has a bottom wall 67 having a hole 68 which communicates with the hole 65 when the plug 66 is oriented by a lug 70 thereof extending into a vertical slot 71 which comprises a radial extension of an upper portion of the hole 63 in the socket 61.

The fountain 10 includes a series of clear plastic tubes 75, any of which is adapted to make a tapered fit with the hollow plug 66 as shown in FIG. 1. The bowl 34 is adapted to be received by the upper end of the lowermost of the tubes 75 and the bowl 35 is adapted to be received on the upper end of the upper of the tubes 75. The tubes 75 are adapted to fit together as shown in FIG. 1 and a clear plastic nozzle 76 fits into the upper end of the upper tube 75 so that it discharges water in the form of a spray 77 into the upper bowl 35.

The lower end of shaft 45 extends into the coupling 32 and thus has a drive connection with the motor 25 so that energization of the latter rapidly rotates the impeller 46 in a clockwise direction, which sucks water inwardly through the opening 63 from the bowl 33 and discharges this water upwardly through the spiral channel 54 the hole 65 and the hole 68 into the lower end of the lower tube 75. This water is discharged in the spray 77, accumulates in the bowls 34 and 35 and flows downwardly therefrom through spouts 80 and 81 provided respectively on said bowls.

The lamp 29 and the motor 25 are preferably both energized in parallel through a common circuit connected by a suitable electric cord to a domestic wiring system outlet. Thus the lamp and motor are both energized whenever the fountain 10 is in operation.

Rotation of the impeller 46 to perform the pumping function above described also results in a concentric swirl being imparted by the impeller to the water occupying the space between the impeller and the color filter disk. The friction between the water thus swirling and the disk 50 causes the latter to rotate at a very slow rate which is precisely what is desired for getting the best effect from the fountain. Light from the lamp 29 constantly shines upwardly through the mask hole 19 and penetrates the bowl bottom 42, the color filter disk 50 and the cover 57 to illuminate the entire upper portion of the fountain with a colored light, the hue of which corresponds with that of the particular color sectors 56 of the disk 50 which is at that moment disposed directly above the lamp 29. The disk 50 rotates about once a minute and there are not over six color sectors 56, so there is a

minimum of ten seconds between color changes. When four such sectors are provided on the disk 50, the changes occur at fifteen second intervals.

From the foregoing description, it is believed evident that the fountain 10 is so manufactured that it may be shipped in knockdown form and easily assembled by the purchaser. In like manner it may just as easily be disassembled for cleaning purposes, and this is of great importance as a fountain must be cleaned every few days to keep it fresh looking and attractive. Furthermore, the illuminating system is ineffective when the water supporting surfaces of the fountain become coated with scum.

The claims are:

1. In an illuminated fountain, the combination of: a fountain bowl having a translucent bottom; a base for supporting said bowl in an elevated position; a vertical bearing mounted centrally in said bottom; a shaft journaling in said bearing; a centrifugal pump impeller fixed on the upper end of said shaft; housing means into which said impeller extends forming a pump chamber and having openings for delivering water from said bowl centrally to said impeller and for receiving water eccentrically from said impeller; a color filter disk disposed above said bowl bottom and rotatably mounted externally on said bearing, said disk being submerged in water contained in said bowl and directly exposed to water set in motion by said impeller, when the latter is rotated, to cause said disk to slowly rotate; and a lamp mounted beneath said bowl bottom and opposite a marginal area on said disk so as to emit rays of light upwardly through said disk as the latter rotates, said marginal area of said disk being provided with a series of different colors in successive sectors thereof.

2. A combination as in claim 1 in which said bowl includes a shallow central cup having a sidewall and a bottom which comprises said bowl bottom: and a cover

for said cup having a peripheral downwardly extending flange which snugly fits into the side wall of said cup, said cover embodying the means aforesaid for forming a housing for said impeller.

3. A combination as in claim 2 in which said impeller includes helical blades shrouded with a peripheral cylindrical wall and in which said cover includes a top wall and a cylindrical impeller housing wall which extends downwardly from said top wall to closely surround said impeller, said openings for admitting water from said bowl centrally to said impeller and receiving water eccentrically from said impeller being provided in said top wall of said cover.

4. A combination as in claim 3 in which said top wall embodies an upwardly opening socket having a tapered bore with which said discharge opening communicates; a tapered tube adapted to have a press fit within said bore; and a superimposed bowl of smaller diameter mounted on the upper end of said tube for receiving the water from the latter and returning said water by gravity to said first mentioned bowl to produce a waterfall.

5. A combination as in claim 3 in which said color filter disk has a cylindrical upstanding flange which overlaps the downwardly extending cylindrical wall provided on said cover to enclose said impeller, thereby forming a relatively confined torque-convector chamber the water in which is rotated by frictional engagement with said impeller whereby the action of this rotating mass of water on said color filter disk transmits rotational movement to the latter.

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