March 10, 1959 W. H. SCHOLL 2,877,052

ILLUMINATED CHANGEABLE COLOR LAWN SPRINKLER

Filed April 2, 1958

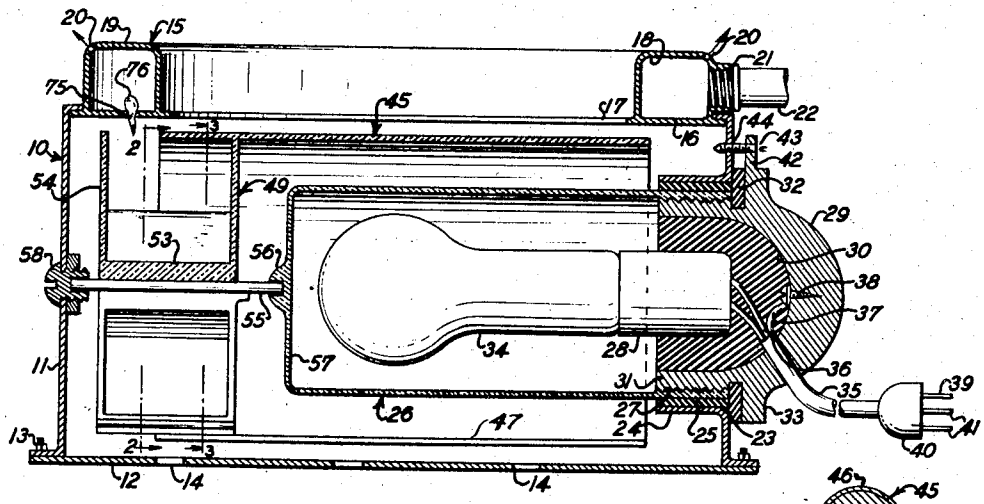


Fig. 1

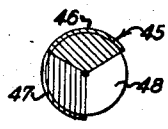


Fig. 5

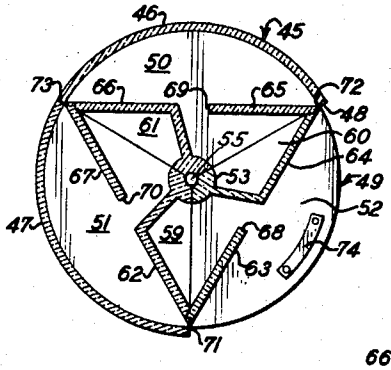


Fig. 3

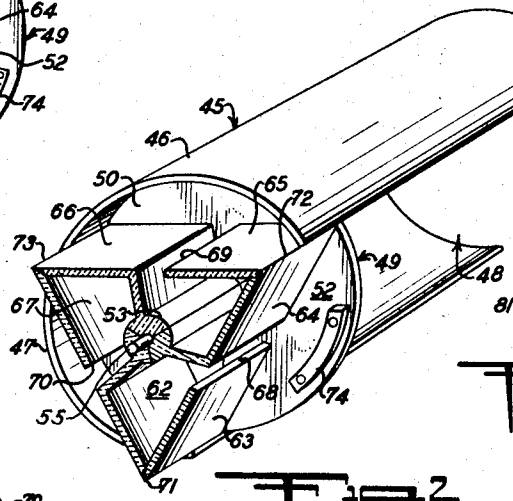


Fig. 2

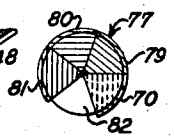


Fig. 6

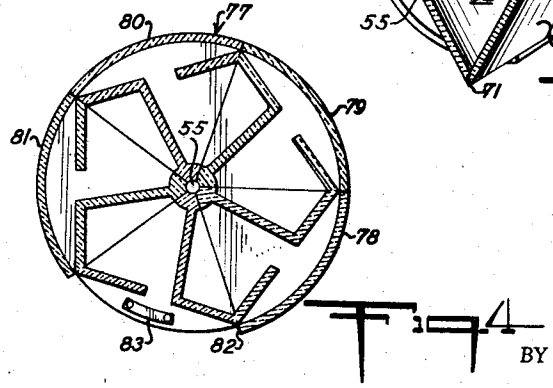


Fig. 4

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United States Patent Office 2,877,052 Patented Mar. 10, 1959

2,877,052

ILLUMINATED CHANGEABLE COLOR LAWN SPRINKLER

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Application April 2, 1958, Serial No. 725,849

8 Claims. (Cl. 299—4)

This invention relates to a water dissipating device having both a utilitarian and a decorative function and more particularly to an illuminated changeable color lawn sprinkler.

Lawn sprinklers of various shapes, sizes and types have long been utilized and a few attempts have been made to illuminate such lawn sprinklers to provide a decorative effect combined with a utilitarian function. Some of these illuminated lawn sprinklers have provided single color illumination, while others have attempted to provide changeable colors but these latter type have been relatively complex, cumbersome and costly to manufacture and also have tended to be somewhat erratic in operation. Of course, illuminated fountains have long been utilized in parks and other public places, but the present invention is concerned primarily with a relatively small portable lawn sprinkler for domestic use and one which, while sprinkling a lawn will provide highly effective and pleasing decorative effects.

It is accordingly an object of the invention to provide an illuminated changeable color lawn sprinkler which may be conveniently and economically manufactured from readily available materials and one which is portable to the extent that the same may be placed at any desired location and the operation of which is automatic and substantially foolproof.

A further object of the invention is the provision of an illuminated changeable color lawn sprinkler in which the illumination is provided by a conventional electric lamp and in which the color of such illumination is periodically changed by the rotation of a vari-colored light filter driven by a water motor.

A still further object of the invention is the provision of an illuminated changeable color lawn sprinkler in which the illumination is provided by a conventional electric lamp and in which such lamp is shielded and protected from water falling from the spray provided by the sprinkler.

Another object of the invention is the provision of an illuminated changeable color lawn sprinkler in which the illumination is projected upwardly within the cone of the water spray, rather than through a substantially solid wall of water thereby materially increasing the degree of illumination and also the height above the device at which such illumination is effective.

A further object of the invention is the provision of an illuminated changeable color lawn sprinkler in which the color of the illumination is automatically and periodically changed and in which the height of such illumination above the device appears to change as the colors change.

A still further object of the invention is the provision of an illuminated changeable color lawn sprinkler in which the illumination is provided by a conventional electric lamp and in which such lamp may be conveniently replaced in the event of burnout without necessitating dismantling of the device.

Another object of the invention is the provision of an illuminated changeable color lawn sprinkler in which the color of the light illuminating the water spray periodically changes and in which the frequency of such changes may be conveniently adjusted.

Further objects and advantages of the invention will be apparent from the following description taken in conjunction with the accompanying drawing wherein:

Fig. 1 is a longitudinal sectional view showing the details of construction of an illuminated changeable color lawn sprinkler constructed in accordance with this invention;

Fig. 2 is a sectional perspective view taken substantially on the line 2—2 of Fig. 1 and showing the hollow rotor, together with the water motor for driving same and which operates to change the color of the light illuminating the water spray;

Fig. 3 is a sectional view taken substantially on the line 3—3 of Fig. 1;

Fig. 4 is a sectional view similar to Fig. 3, but showing a slightly modified form of the invention in which a rotor with additional color sections is employed;

Fig. 5 is an end view indicating a rotor having sections of three different colors; and

Fig. 6 is an end view similar to Fig. 5 but showing a rotor having sections of five different colors.

With continued reference to the drawing, there is shown an illuminated changeable color lawn sprinkler constructed in accordance with this invention and which may well comprise a hollow circular base **10** having a sidewall **11** and a base plate **12** secured to the sidewall **11** by any suitable means, such as screw threaded fastening members **13**. The base plate **12** is provided with a plurality of drain holes **14**, the purpose of which will be later described.

The base **10** is open at the top and secured to the upper edge of the sidewall **11** is a sprinkler ring **15** of substantially conventional design, such ring having a bottom wall **16** providing an inwardly extending annular flange on the sidewall **11** and which results in partially closing the upper end of the base **10** to provide a central opening **17** therein. The ring **15** is provided with an annular water passage **18** and in the top wall **19** of the ring **15** there is provided a plurality of sprinkler apertures **20** communicating with the passage **18** and directed outwardly to provide an inverted cone-shaped water spray. A threaded aperture **21** is provided in the sidewall of the sprinkler ring **15** communicating with the passage **18** and such aperture **21** serves to removably receive a fitting on a water supply hose or conduit **22** which may be connected to any suitable water supply.

The sidewall **11** of the base **10** is provided with an aperture **23** surrounded by an inwardly extended flange **24** and sealed in the flange **24** and secured thereto by a suitable gasket or cement **25** is a horizontally disposed transparent cup **26** which extends inwardly of the base **10** below the central opening **17** and the inner surface of the open end of the cup **26** is provided with screw threads **27** for a purpose to be presently described.

An electric socket **28** is secured in a closure plug **29** by cement **30** or other suitable material and the plug **29** is provided with a screw threaded portion **31** to be threadedly received in the threaded opening **27** of the cup **26** there being a gasket **32** disposed between a flange **33** on the plug **29** and the sidewall **11** of the base **10** in order to provide a weatherproof connection between the plug **29** and the base **10**. The socket **28** serves to receive and support a conventional electric lamp **34** in horizontal position within the cup **26**.

An electric cable **35** is provided with conductors **36** connected to the socket **28** and with a conductor **37** connected to the plug **29** by screw threaded fastening means or the like **38**, the conductor **37** being connected to a grounded prong **39** on an electric plug **40** which is also provided

with prongs 41 connected to conductors 36. The conductors 36 serve to provide energizing current to the electric lamp 34 and the conductor 37 serves to ground the plug 29 which in turn is electrically connected through an ear 42 and a screw 43 threaded into an opening 44 in the sidewall 11 of the base 10 in order to ground the entire device and thereby eliminate shock hazard.

A hollow rotor 45 of light transmitting material is disposed over the cup 26 and extends diametrically across the central opening 17 in the upper part of the base 10. As best shown in Figs. 1, 2 and 3, the rotor 45 may comprise a plurality of arcuate sections 46 and 47 extending throughout the length thereof and an open section 48. The section 46 may be of one color, while the section 47 is of a different color and, of course, the open section 48 would serve to transmit light of the same color as the electric lamp 34.

The rotor 45 is provided with a segmental light transmitting partition 49 there being one segment 50 of the same color as the arcuate section 46, a second segment 51 of the same color as the arcuate section 47 and a third segment 52 which is clear to correspond with the open section 48. Each segment may be integral with the corresponding arcuate section and the segments, as well as the sections are cemented together to form the rotor 45.

A central hub 53 is secured to the segmental partition 49 and the hub 53 serves to support an outer end wall 54 and also to receive a spindle 55 which in turn is rotatably mounted in a boss 56 on the end wall 57 of the cup 26 and the opposite end of the spindle 55 is rotatably mounted in a screw 58 threadedly received in the sidewall 11 of the base 10. Consequently, it will be seen that the rotor 45 may rotate around the cup 26.

Between the segmental partition 49 and the end wall 54 there is provided a plurality of generally triangularly shaped buckets 59, 60 and 61, the bucket 59 being formed by a wall 62 extending between the partition 49 and end wall 54 and of the same color as the segment 51 and arcuate section 47. The remainder of the bucket 59 is formed by a wall 63 which is clear and is secured to the segment 52 as well as the end wall 54. In a similar manner, the bucket 60 is formed by a clear end wall 64 secured to the segment 52 and another end wall 65 secured to the segment 50 and of the same color. The bucket 61 is formed by a wall 66 secured to the segment 50 and of the same color and by another wall 67 secured to the segment 51 and of the same color. The bucket 59 is provided with an opening 68, while the buckets 60 and 61 are provided with openings 69 and 70 respectively. It is to be noted, that the apex 71 of the bucket 59 is diametrically opposite the center of the arcuate section 46, while the apex 72 of the bucket 60 is diametrically opposite the center of the arcuate section 47 and the apex 73 of the bucket 61 is diametrically opposite the center of the open section 48. In order to provide a balanced structure, there may be provided a counterweight 74 on the segmental partition 49 opposite the open section 48 of the rotor 45.

As best shown in Fig. 2, the openings 68, 69 and 70 of the buckets 59, 60 and 61 are disposed below the bottom wall 16 of the sprinkler ring 15 and such bottom wall 16 is provided with an aperture 75 in which is disposed a wick 76 which serves to meter the flow of water through the aperture 75 thereby determining the time required for filling each bucket on the rotor 45 with water to the extent necessary to cause rotation of the rotor around the cup 26.

In operation and with water under pressure supplied to the passage 18 in the sprinkler ring 15, a spray of water will emanate from the apertures 20 and at the same time, water will drip through the apertures 75 in the bottom wall 16 of the sprinkler ring 15 until one of the buckets on the rotor 45 is filled to a sufficient extent to cause rotation of the same. Such rotation will continue until the filled bucket reaches the bottom position with the apex of such bucket disposed downwardly whereupon the arcuate section of the rotor 45 diametrically opposite to the lower bucket will be disposed below the central opening 17 in the base 10 and between the lamps 34 and such opening. Consequently, light emanating from the lamp 34 will pass through the colored section of the rotor 45 and will illuminate the water spray with a light of a corresponding color. At the same time, water is continuing to drip through the opening 75 into the next bucket on the rotor 45 and when such bucket has been filled to the extent necessary to overcome the inertia of the rotor 45, the same will rotate into the next position which will dispose the next colored arcuate section below the central opening 17 in the base 10. The operation will then be repeated to position the open section 48 below the central opening 17 which will result in the water spray being illuminated by a clear light. As the illumination changes color, obviously the amount of light transmitted will also change with the result that the height of the illumination will change thereby giving the appearance of a spray which moves up and down in accordance with the color changes. The water discharged from the buckets on the rotor 45 will, of course, empty into the bottom of the base 10 and drain through the apertures 14 in the base plate 12. The device will continue to operate as long as water under pressure is supplied thereto and since the only moving part is the rotor 45, there will be substantially no wear and the same will operate over long periods of time without repair or other attention. In the event electric lamp 34 burns out, the same may be conveniently replaced by merely removing the plug 29 with the socket 28 attached thereto, at which time, the lamp 34 may be replaced and the plug 29 inserted in the open end of the cup 26. The lamp 34 and all electrical connections are completely protected from water, but it is to be noted that some water may fall through the open section 48 of the rotor 45 and be deposited on the surface of the cup 26, but this will only serve to cool the same and will not be harmful in any way.

The form of the invention shown in Figs. 4 and 5 is substantially the same as that above described, except that a rotor 77 may be provided with four arcuate sections 78, 79, 80 and 81 of different colors and an open section 82 and as in the above described form, a counterweight 83 will be provided opposite the open section 82 to balance the rotor structure. As in the above described form of the invention, a water receiving bucket for each section of the rotor will be provided and consequently the number of colors utilized for illuminating the spray may be varied to suit the demands of the user.

It will be seen that by the above described invention, there has been provided a relatively simple, yet highly effective changeable color lawn sprinkler which may be conveniently and economically constructed and which is substantially foolproof in operation. The device may, of course, be supplied in various sizes and also with the desired number and types of colors for illuminating the spray. The operation is entirely automatic and requires no attention whatsoever from the user.

It will be obvious to those skilled in the art that various changes may be made in the invention without departing from the spirit and scope thereof and therefore the invention is not limited by that which is shown in the drawing and described in the specification, but only as indicated in the appended claims.

What is claimed is:

1. An illuminated changeable color lawn sprinkler comprising a hollow circular base open at the upper end, a sprinkler ring secured to the upper end of said base, the bottom wall of said ring providing an inwardly extending annular flange partially closing the upper end of said base and providing a central opening, an annular water passage in said ring, a plurality of sprinkler apertures in the top wall of said ring communicating with said passage, a water inlet connection communicating with said passage, an aperture in the sidewall of said

base, an inwardly extending flange surrounding said last named aperture, a horizontally disposed transparent cup extending inwardly of said base below said central opening with the open end of said cup sealed in said last named aperture, an electric socket removably secured in the open end of said cup, an electric lamp received in said socket and disposed in said cup, a hollow rotor of light transmitting material disposed over said cup and extending diametrically across said central opening, said rotor comprising a plurality of arcuate sections extending throughout the length thereof and an open section, each arcuate section being of a different color from each other section, a segmental light transmitting partition in said rotor, the segments opposite said arcuate sections being integral therewith and of the same color as each arcuate section, the segment opposite said open section being of clear transparent material, a plurality of buckets of light transmitting material integral with said partition, there being one bucket for each arcuate section and said open section and of the same color as the associated portion of said partition, said buckets being partially covered by the arcuate sections of said rotor, a portion of said buckets disposed below the bottom wall of said ring being open, means supported on said base and the end wall of said cup for rotatably mounting said rotor, an aperture in the bottom wall of said ring for discharging water into said buckets and means in said last named aperture for metering the flow of water, whereby as each bucket fills with water said rotor will move through an arc corresponding to the angular length of each arcuate section and open section to periodically change the color of light projected upwardly through said central opening to illuminate the water spray with changeable colored light.

2. A device as defined in claim 1 in which a counterweight is provided on said partition opposite said open section to balance said rotor.

3. An illuminated changeable color lawn sprinkler comprising a hollow base open at the upper end, a sprinkler ring secured to the upper end of said base, the bottom wall of said ring providing an inwardly extending annular flange partially closing the upper end of said base and providing a central opening, an annular water passage in said ring, a plurality of sprinkler apertures in the top wall of said ring communicating with said passage, a water inlet connection communicating with said passage, an aperture in the sidewall of said base, a horizontally disposed transparent cup extending inwardly of said base below said central opening with the open end of said cup sealed in said last named aperture, an electric socket removably secured in the open end of said cup, an electric lamp received in said socket and disposed in said cup, a hollow rotor of light transmitting material disposed over said cup and extending diametrically across said central opening, said rotor comprising a plurality of arcuate sections extending throughout the length thereof and an open section, each arcuate section being of a different color from each other section, a segmental light transmitting partition in said rotor, the segments opposite said arcuate sections being integral therewith and of the same color as each arcuate section, the segment opposite said open section being of clear transparent material, a plurality of buckets of light transmitting material integral with said partition, there being one bucket for each arcuate section and said open section and of the same color as the associated portion of said partition, said buckets being partially covered by the arcuate sections of said rotor, a portion of said buckets disposed below the bottom wall of said ring being open, means supported on said base and the end wall of said cup for rotatably mounting said rotor, an aperture in the bottom wall of said ring for discharging water into said buckets and means in said last named aperture for metering the flow of water, whereby as each bucket fills with water said rotor will move through an arc corresponding to the angular length of each arcuate section and open section to periodically change the color of light projected upwardly through said central opening to illuminate the water spray with changeable colored light.

4. An illuminated changeable color lawn sprinkler comprising a hollow base open at the upper end, a sprinkler ring secured to the upper end of said base, the bottom wall of said ring providing an inwardly extending annular flange partially closing the upper end of said base and providing a central opening, an annular water passage in said ring, a plurality of sprinkler apertures in the top wall of said ring communicating with said passage, a water inlet connection communicating with said passage, an aperture in the sidewall of said base, a horizontally disposed transparent cup extending inwardly of said base below said central opening with the open end of said cup sealed in said last named aperture, an electric socket removably secured in the open end of said cup, an electric lamp received in said socket and disposed in said cup, a hollow rotor of light transmitting material disposed over said cup and extending diametrically across said central opening, said rotor comprising a plurality of arcuate sections extending throughout the length thereof and an open section, each arcuate section being of a different color from each other section, a segmental light transmitting partition in said rotor, the segments opposite said arcuate sections being integral therewith and of the same color as each arcuate section, the segment opposite said open section being of clear transparent material, a plurality of buckets of light transmitting material integral with said partition, there being one bucket for each arcuate section and said open section and of the same color as the associated portion of said partition, said buckets being disposed below the bottom wall of said ring, means supported on said base and the end wall of said cup for rotatably mounting said rotor, an aperture in the bottom wall of said ring for discharging water into said buckets and means in said last named aperture for metering the flow of water, whereby as each bucket fills with water said rotor will move through an arc corresponding to the angular length of each arcuate section and open section to periodically change the color of light projected upwardly through said central opening to illuminate the water spray with changeable colored light.

5. An illuminated changeable color lawn sprinkler comprising a hollow base open at the upper end, a sprinkler ring secured to the upper end of said base, the bottom wall of said ring providing an inwardly extending annular flange partially closing the upper end of said base and providing a central opening, an annular water passage in said ring, a plurality of sprinkler apertures in the top wall of said ring communicating with said passage, a water inlet connection communicating with said passage, an aperture in the sidewall of said base, a horizontally disposed transparent cup extending inwardly of said base below said central opening with the open end of said cup sealed in said last named aperture, an electric socket removably secured in the open end of said cup, an electric lamp received in said socket and disposed in said cup, a hollow rotor of light transmitting material disposed over said cup and extending diametrically across said central opening, said rotor comprising a plurality of arcuate sections extending throughout the length thereof and an open section, each arcuate section being of a different color from each other section, a segmental light transmitting partition in said rotor, the segments opposite said arcuate sections being integral therewith and of the same color as each arcuate section, the segment opposite said open section being of clear transparent material, a plurality of buckets of light transmitting material integral with said partition, there being one bucket for each arcuate section and said open section and of the same color of said associated portion of said partition, said buckets being disposed below the bottom wall of said ring, means supported on said base and the end wall of said cup for

rotatably mounting said rotor and an aperture in the bottom wall of said ring for discharging water into said buckets whereby as each bucket fills with water said rotor will move through an arc corresponding to the angular length of each arcuate section and open section to periodically change the color of light projected upwardly through said central opening to illuminate the water spray with changeable colored light.

6. An illuminated changeable color lawn sprinkler comprising a hollow base open at the upper end, a sprinkler ring secured to the upper end of said base, the bottom wall of said ring secured to the upper end of said base, the bottom wall of said ring providing an inwardly extending annular flange partially closing the upper end of said base and providing a central opening, an annular water passage in said ring, a plurality of sprinkler apertures in the top wall of said ring communicating with said passage, a water inlet connection communicating with said passage, an aperture in the sidewall of said base, a horizontally disposed transparent cup extending inwardly of said base below said opening with the open end of said cup sealed in said last named aperture, an electric socket removably secured in the open end of said cup, an electric lamp received in said socket and disposed in said cup, a hollow rotor of light transmitting material disposed over said cup and extending diametrically across said central opening, said rotor comprising a plurality of arcuate sections extending throughout the length thereof and open section, each arcuate section being of a different color from each other section, a partition in said rotor, a plurality of buckets integral with said partition, there being one bucket for each arcuate section and said open section, said buckets being disposed below the bottom wall of said ring, means supported on said base and the end wall of said cup for rotatably mounting said rotor and an aperture in the bottom wall of said ring for discharging water into said buckets whereby as each bucket fills with water said rotor will move through an arc corresponding to the angular length of each arcuate section and open section to periodically change the color of light projected upwardly through said central opening to illuminate the water spray with changeable colored light.

7. An illuminated changeable color lawn sprinkler comprising a hollow base open at the upper end, a sprinkler ring secured to the upper end of said base and providing a central opening, an annular water passage in said ring, a plurality of sprinkler apertures in the top wall of said ring communicating with said passage, a water inlet connection communicating with said passage, an aperture in the sidewall of said base, a horizontally disposed transparent cup extending inwardly of said base below said central opening with the open end of said cup sealed in

the said last named aperture, an electric socket removably secured in the open end of said cup, an electric lamp received in said socket and disposed in said cup, a hollow rotor of light transmitting material disposed over said cup and extending diametrically across said central opening, said rotor comprising a plurality of arcuate sections extending throughout the length thereof and an open section, each arcuate section being of a different color from each other section, a partition in said rotor, a plurality of buckets integral with said partition, there being one bucket for each arcuate section and said open section, said buckets being disposed below the bottom wall of said ring, means supported on said base and the end wall of said cup for rotatably mounting said rotor and an aperture in the bottom wall of said ring for discharging water into said buckets, whereby as each bucket fills with water said rotor will move through an arc corresponding to the angular length of each arcuate section and open section to periodically change the color of light projected upwardly through said central opening to illuminate the water spray with changeable colored light.

8. An illuminated changeable color lawn sprinkler comprising a hollow base open at the upper end, a sprinkler ring secured to the upper end of said base and providing a central opening, an annular water passage in said ring, a plurality of sprinkler apertures in the top wall of said ring communicating with said passage, a water inlet connection communicating with said passage, an aperture in the sidewall of said base, a horizontally disposed transparent cup extending inwardly of said base below said central opening with the open end of said cup mounted in the said last named aperture, an electric socket removably secured in the open end of said cup, an electric lamp received in said socket and disposed in said cup, a hollow rotor of light transmitting material disposed over said cup and extending across said central opening, said rotor comprising a plurality of sections extending throughout the length thereof and an open section, each section being of a different color from each other section, a partion in said rotor, a plurality of buckets on said partition, there being one bucket for each section, said buckets being disposed below the bottom wall of said ring, means supported on said base and the end wall of said cup for rotatably mounting said rotor and an aperture in the bottom wall of said ring for discharging water into said buckets, whereby as each bucket fills with water said rotor will move through an arc corresponding to the angular length of each section and to periodically change the color of light projected upwardly through said central opening to illuminate the water spray with changeable colored light.

No references cited.