April 21, 1959 F. J. HORVATH 2,883,114

ILLUMINATED LAWN SPRINKLER AND/OR ATTACHMENT

Original Filed April 18, 1955 2 Sheets-Sheet 1

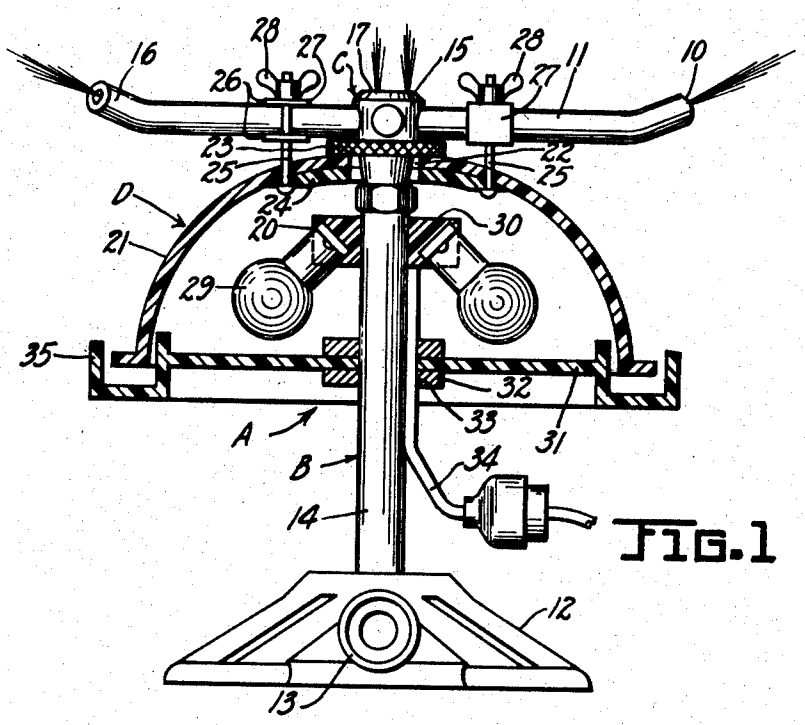


FIG. 1

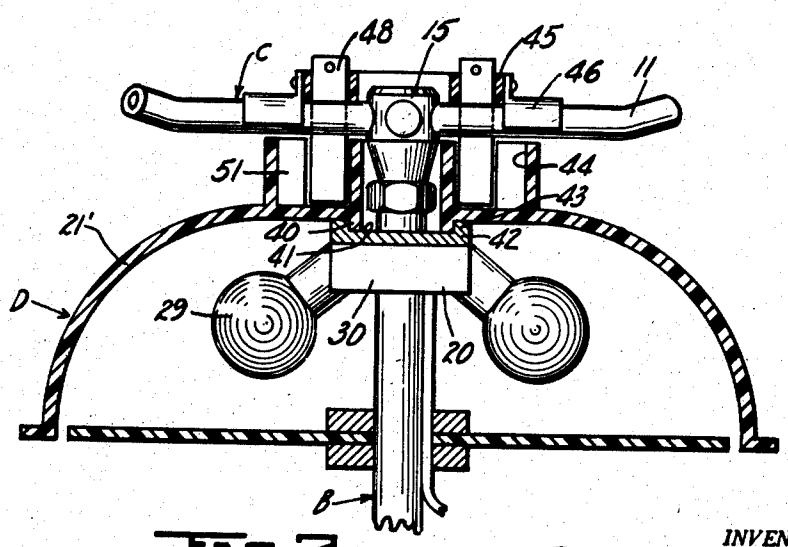


FIG. 2

INVENTOR.
FRANK J. HORVATH
BY
William P. Hickey
ATTORNEY

April 21, 1959 F. J. HORVATH 2,883,114

ILLUMINATED LAWN SPRINKLER AND/OR ATTACHMENT

Original Filed April 18, 1955 2 Sheets-Sheet 2

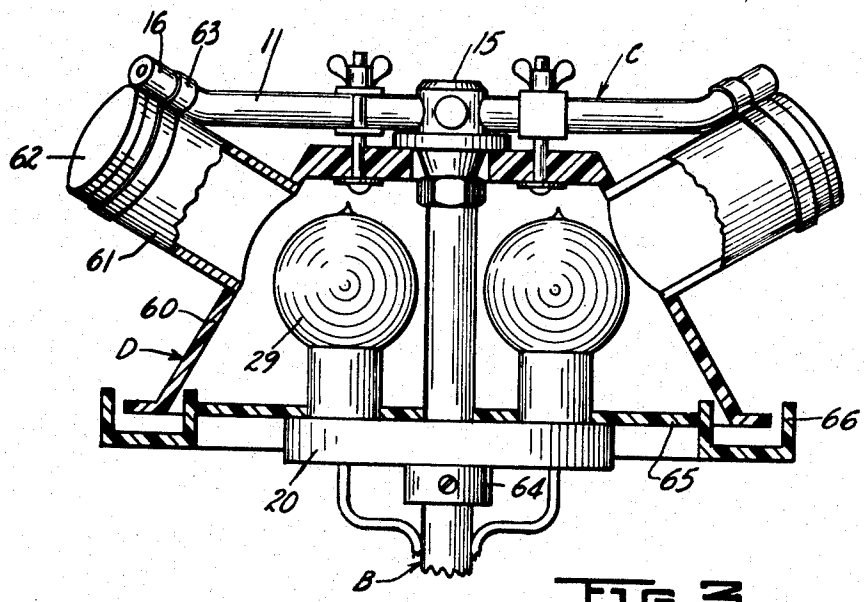


FIG. 3

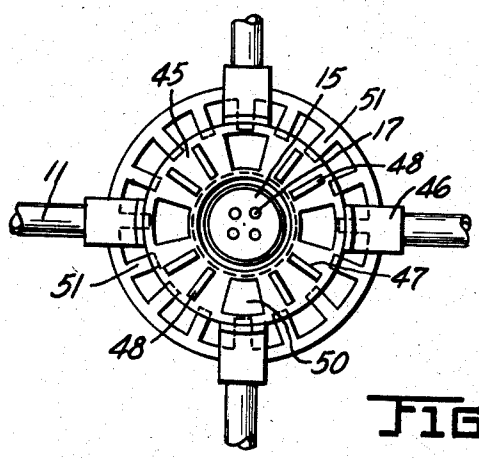


FIG. 4

INVENTOR.
FRANK J. HORVATH
BY
William P. Hickey
ATTORNEY

United States Patent Office 2,883,114 Patented Apr. 21, 1959

2,883,114

ILLUMINATED LAWN SPRINKLER AND/OR ATTACHMENT

Frank J. Horvath, Cleveland Heights, Ohio

Original application April 18, 1955, Serial No. 501,940. Divided and this application April 8, 1957, Serial No. 651,488

10 Claims. (Cl. 239—19)

The present invention relates to lawn sprinklers and the like, and more particularly, to an illuminating attachment therefor and to illuminated sprinkling devices.

The present application is a division of my copending application Serial Number 501,940 filed April 18, 1955 and now abandoned.

An object of the present invention is the provision of a new and improved illuminated lawn sprinkler device, or the like, of the type having a revolving sprinkler element, which device is simple and rugged in construction, inexpensive to manufacture, and which substantially completely and effectively lights up the water sprayed by the device.

Another object of the invention is the provision of a new and improved illuminated lawn sprinkler device, or the like, of the type having a sprinkler element rotatably mounted on the upper end of a pedestal, and which device substantially completely and effectively illuminates the water sprayed from the rotatably mounted sprinkler element from a position beneath the trajectory of the sprayed water.

Still another object of the invention is the provision of a new and improved illuminated lawn sprinkler device, or the like, of the type having a sprinkler element rotatably mounted on the upper end of a pedestal, and having means for substantially completely illuminating water sprayed from the rotatably mounted sprinkler element with light of different colors, and which means is adapted to rotate to produce a dynamic colored lighting effect.

Another object of the invention is the provision of a new and improved illuminated lawn sprinkler, or the like, of the above described type wherein the means for illuminating the water spray with colored light is driven by the rotatably mounted sprinkler element, and wherein means are employed to decrease the speed of rotation of both the sprinkler element and the illuminating means.

Still another object of the invention is the provision of a new and improved illuminated lawn sprinkler, or the like, of the type having a sprinkler element rotatably mounted on the upper end of a pedestal and comprising, means for illuminating at least some of the water sprayed from the rotatably mounted sprinkler element, means rotatably mounting said first mentioned means to the pedestal, and means forming a driving connection between said rotatable sprinkler element and said first mentioned means, which driving connection will rotate said first mentioned means at a speed less than the speed of rotation of said rotatable sprinkler element.

A further object of the invention is the provision of a new and improved illuminated lawn sprinkler device, or the like, of the type having a sprinkler element, with at least one spray nozzle therein, rotatably mounted on the top of a pedestal, said device also having a colored light source adapted to direct colored light directly upon the water issuing from the spray nozzle.

A still further object of the invention is the provision of a new and improved illuminating attachment for a lawn sprinkler, or the like, of the type having a sprinkler element rotatably mounted on the top of a pedestal, and which illuminating attachment incorporates various of the objects above enumerated.

Other objects and advantages will be apparent to those skilled in the art to which the invention relates from the following description of the preferred embodiments described with reference to the attached drawings forming a part of this specification in which like numerals designate corresponding parts, and in which:

Figure 1 is a side elevational view, with parts in section, of one embodiment of the invention;

Figure 2 is a side elevational view, with parts in section, of another embodiment of the invention;

Figure 3 is a side elevational view, with parts in section, of still another embodiment of the invention; and

Figure 4 is a plan view of Figure 2.

As previously indicated the present invention relates to illuminated lawn sprinklers, or the like, of the type having a pedestal on the top of which is rotatably mounted a sprinkler element or head containing one or more spray nozzles, and to the illuminating means therefor, which means can preferably be made as an attachment for lawn sprinklers now commercially available. The invention may be variously embodied, but will preferably include one or more sources of colored light mounted for rotation about the pedestal and driven by the sprinkler element at a speed which may be the same as or different from the speed of rotation of the rotatable sprinkler element. The source of light may be directed at the discharge of the spray nozzles, or may be made to blanket the spray pattern of the sprinkler device. Where the latter blanketing effect is to be achieved, the light source, or sources will preferably be positioned beneath the sprinkler element and will surround the pedestal. This will conveniently be accomplished in the preferred forms of the invention by a stationary light source positioned about the pedestal as for example a circular flourescent tube, or a plurality of incandescent bulbs spaced about the pedestal, and a hood structure positioned about the pedestal and overlying the light source; which structure may be made from various colored light transmitting substances. The hood structure may therefore be considered to be the source of colored light and will preferably be mounted for rotation about the pedestal in a manner permitting the structure to be driven by the rotatable sprinkler element. The invention is susceptible to the production of numerous and varied lighting effects, and several preferred embodiments of the invention will now be described.

Referring to Figure 1 of the drawings letter A designates a more or less conventional lawn sprinkler of the previously referred to type having a pedestal B on the upper end of which is rotatably mounted a sprinkler element or head C adapted to be rotated by the reaction of the water sprayed from the nozzles or jets **10** located in the ends of the arms **11** of the sprinkler head. The pedestal A is provided with a base or standard **12**, and a hose connection **13** through which water is conducted to the vertical tubular portion **14** and thence to the rotatable sprinkler head C. The center hub **15** of the sprinkler head C is rotatably mounted on the top of the pedestal B in a manner providing a water tight seal, and the water is thence conducted through a plurality of substantially horizontally positioned tubular arms **11** (in the present instance four) to the nozzles or jets **10** on their outer ends. The outer ends of the arms are bent either slightly clockwise or slightly counterclockwise (in the present case counterclockwise as viewed in plan) such that the reaction of the water sprayed from the nozzles or jets **10** rotates the sprinkler head C. The ends

16 of the arms 11 are also bent slightly upwardly so as to give the water sprayed from the nozzles a larger trajectory and holes 17 are provided in the top of the hub 15 such that water will be sprayed in the area immediately surrounding the sprinkler. The structure above described represents a typical lawn sprinkler of the type commercially available as well known in the art and as such forms no part of the present invention.

To the sprinkler structure A above described, is mounted illuminating equipment D which may be in the form of an attachment to be added to the sprinkler structure A by the customer or which may be assembled to the sprinkler structure A and forms part of the original equipment. The illuminating equipment D shown, comprises a source of light 20 adapted to be spaced about the pedestal B and a generally hemispherical light transmitting dome 21 adapted to be placed around the pedestal B about the light source 20, such that the water spray is illuminated by light passing through the light transmitting dome. The dome 21 is preferably made to transmit light of several colors and will preferably be mounted for rotation about the centerline of the sprinkler structure. The dome 21 shown has a hole 22 in its center adapted to be slipped over the bottom of the hub 15 and to be held against the bottom of a rubber gasket 23 positioned about the hub 15 beneath the arms 11, by an annular transparent back-up washer 24 positioned on the inside of the dome and clamped to the arms 11 by bolts 25. The bolts 25 extend upward through holes in the back-up washer 24 and dome 21 and each extends through holes in the horizontally positioned legs 26 of a U-shaped bracket 27 slipped over one of the arms 11 and which bolt is locked in place by a wing nut 28.

The light source 20 shown, comprises four incandescent bulbs 29 positioned in equally spaced sockets in turn supported by an annular member 30 adapted to be positioned about the pedestal beneath the dome 21 and held in by any convenient means as for example a set screw, not shown. An annular reflector plate 31 having a centrally located annular boss 32 is adapted to be slipped up around the pedestal B beneath the light source and locked in place in any convenient manner as by a set screw, not shown. The reflector plate 31 contains a small hole 33 adapted to receive a light cord 34 the end of which is connected to the bulb receiving sockets in the annular member 30.

The dome 21 shown, has very little wind resistance and hence does not substantially reduce the speed of rotation of the sprinkler head. It will be desirable in certain instances to reduce the speed of rotation of the sprinkler head and dome. This may be done in any convenient manner and may very effectively be accomplished by a type of fluid coupling or brake in which water is held between a stationary and revolving part. As shown an open top annular pan 35 is supported around the outside of reflector plate 31 such that the bottom edge of dome 21 may be positioned in the annular pan 35. Spray from the holes in the top of hub 15 falls upon the dome 21 and runs into the annular pan 35 until it is full and overflows over the outside edge of the pan. The reflector plate 31 may be raised or lowered upon the pedestal such that the bottom edge of the dome 21 may be made to extend various distances into the pan to engage various depths of water and thereby control the speed of rotation of the sprinkler head and dome 21.

It will be seen that the sprinkler head and dome of the embodiment described above rotate at the same speed and illuminate substantially the entire spray pattern of the sprinkler to produce a very pleasing effect.

Another very pleasing lighting effect can be had by having the sprinkler head and dome rotate at different speeds. This may be accomplished in any convenient manner, and as shown in the embodiment illustrated in Figure 2, is accomplished by the use of a type of fluid coupling between the sprinkler head and an independently rotatably mounted dome. The dome 21' of the embodiment shown in Figure 2 is provided with a downwardly extending annular projection 40 adapted to bear upon the top face 41 of an annular bearing structure 42 positioned about the pedestal B on top of the annular member 30 which supports the socket for the bulbs 29. The top surface 41 of the annular bearing structure 42 has an annular projection 43 on its upper surface adapted to surround annular projection 40 of the dome 21' and thereby center the dome 21' about the pedestal B. The top surface of the dome 21' is slightly flattened and is provided with an open top annular chamber 44 adjacent the hub 15 to form one member of the fluid coupling. The other member of the fluid coupling is formed by an annular member 45 adapted to rest upon the arms 11 about the hub 15 and to be clamped to the arms by spring clips 46. The annular member 45 contains vertical slots 47 therein adapted to retain paddles 48 which are frictionally retained therein and the lower end of which project into the open top annular chamber 44. The annular member 45 also contains large holes 50 therein which help to permit water spray to reach the open top annular chamber 44. The paddles 48 may be raised or lowered to provide various amounts of fluid engagement and the radial outer portion of the open top annular chamber 44 is provided with radial projections 51 which clear the paddles 48 to help increase water turbulence and therefore the amount of fluid coupling.

A third embodiment of the invention is shown in Figure 3 wherein means is provided to direct light directly upon the water discharged from the nozzles on the ends of the arms 11. In this embodiment a frusto-conically shaped dome 60 is provided having tubular projections 61 projecting from its inclined surface and adapted to direct light upon the tips of the sprinkler arms 11. The dome 60 and tubular projection 61 may be opaque or may be made from color transmitting material as for example colored Plexiglas etc. and colored light transmitting discs 62 may be provided on the ends of the tubular projections 61 to direct colored light on the water spray as it issues from the spray nozzles in the tips of the sprinkler arms 11. Clamps 63 may also be provided to brace the tubular projections 61 to the arms 11.

Figure 3 also illustrates another preferred method of supporting the light producing means. In this embodiment the sockets 20 into which the bulbs 29 are screwed and supported from the annular support ring 64 of the reflector plate structure 65. The support ring 64 is positioned about the pedestal 14 and is held in place in any convenient manner as for example by a set screw not shown, and the reflector plate 65 is provided with an annular pan 66 on its outer edge similar to that shown in Figure 1.

While the preferred embodiments of the invention have been described as utilizing a dome positioned over a light source to provide colored illumination of the water spray, the invention is not so limited. Individual colored bulbs with or without individual reflectors may be positioned about the centerline of the sprinkler preferably below the sprinkler arms, and preferably although not necessarily adapted to be revolved about the centerline. A transparent dome may or may not also be placed over the lights to protect them from the spray.

From the foregoing description of the invention, it will be apparent that the objects heretofore enumerated, as well as others, have been accomplished, and that there has been provided a new and improved illuminated lawn sprinkler etc. and/or a lighting attachment therefor which can be made simply and cheaply and which can be made to substantially uniformly and completely light up the water sprayed by the sprinkler and which can be made to produce various unique lighting effects.

While the preferred embodiments of the invention have been described in considerable detail, I do not wish to be limited to the particular constructions shown which may be varied within the scope of the invention and it is the intention to cover hereby all adaptations, modifications and arrangements thereof which come within the practice of those skilled in the art to which the invention relates.

I claim:

1. A lawn sprinkler or the like of the type having a pedestal member rotatably supporting a sprinkler head member on its upper end comprising, at least one light source positioned about said pedestal, and a hood structure extending about said pedestal member and positioned about said source of light adapted to illuminate at least a part of the trajectory of water sprayed from said sprinkler head member during its operation, means rotatably supporting said hood structure to said pedestal member, water retaining means attached to said hood structure for holding a predetermined depth of water about said pedestal member, and drive means attached to said sprinkler head member and adapted to engage water in said water retaining means thereby providing a driving connection between said sprinkler head member and said hood structure.

2. A lawn sprinkler or the like comprising a pedestal member through which water may be conducted, a rotatable head mounted on said pedestal member and adapted to receive water from said pedestal member, a plurality of generally laterally projecting nozzles on said head, said nozzles being adapted to receive water from said head and to rotate said head, light producing means positioned beneath said head and extending around said pedestal member to illuminate water issuing from said head, a colored light transmitting hood structure having a centrally located opening therein through which said pedestal member extends, said hood structure being positioned between said nozzles and the light producing means and extending around said pedestal member in a manner covering said light producing means, driving means operatively connecting said hood structure to said rotatable head, and a generally horizontal tray into which a portion of said hood structure projects to engage water in said tray to produce a fluid coupling effect which retards said hood structure.

3. A lawn sprinkler or the like comprising a pedestal member through which water may be conducted, a rotatable head mounted on said pedestal member and adapted to receive water from said pedestal member, a plurality of generally laterally projecting nozzles on said head, said nozzles being adapted to receive water from said head and to rotate said head, light producing means positioned beneath said head and extending around said pedestal member to illuminate water issuing from said head, a light transmitting hood structure having a centrally located opening therein through which said pedestal member extends, said hood structure being positioned between said nozzles and said light producing means and extending around said pedestal member in a manner covering said light producing means, and driving means operatively connecting said hood structure to said rotatable head and comprising a first cup-shaped tray for holding water, and a second member having paddles which project into said water for providing a fluid coupling effect therewith, one of said first and second members being carried by said rotatable head and the other of said first and second members being carried by said hood structure.

4. A lawn sprinkler or the like comprising a pedestal member through which water may be conducted, a rotatable head mounted on said pedestal member and adapted to receive water from said pedestal member, a plurality of generally laterally projecting nozzles on said head, said nozzles being adapted to receive water from said head and to rotate said head, light producing means positioned beneath said head and extending around said pedestal member to illuminate water issuing from said head, a light transmitting hood structure having a centrally located opening therein through which said pedestal member extends, said hood being positioned between said nozzles and said light producing means and extending around said pedestal member in a manner covering said light producing means, said hood structure having a cup-shaped tray thereon for retaining water, means rotatably supporting said hood structure from said pedestal member, and means carried by said rotatable head projecting into said tray for contacting water therein and providing a fluid coupling effect.

5. A lawn sprinkler or the like comprising, a pedestal member through which water may be conducted, a rotatable head mounted on said pedestal member and adapted to receive water from said pedestal member, a plurality of generally laterally projecting tubular arms on said head, said arms being adapted to receive water from said head, spray nozzles on said arms and from which water issues to rotate said head, stationary light producing means positioned beneath said arms and extending around said pedestal member to illuminate water issuing from each of said arms, a light transmitting hood structure having a centrally located opening therein through which said pedestal member is adapted to extend, said hood structure being positioned between said stationary light producing means and said arms and extending around said pedestal member in a manner shielding said light producing means from the spray, said hood structure having a cup-shaped tray thereon for retaining water, means rotatably supporting said hood structure from said pedestal member, and means carried by said rotatable head projecting into said tray for contacting water therein and providing a fluid coupling effect.

6. In a lawn sprinkler of the type having a stationary water conducting tubular member which supplies water to a sprinkler head member mounted thereon that is rotatably driven by water issuing therefrom and the issuing water from which is color illuminated by light transmitting means that is rotated relative to the tubular member by the sprinkler head; said sprinkler further having means operatively interpositioned between one of said members and said light transmitting means for regulating its speed of rotation and comprising: generally horizontally positioned tray means for receiving water issuing from said sprinkler, and water contacting means extending down into said tray to provide a fluid coupling effect with water held in said tray, one of said means being operatively connected to said light transmitting means and the other of said means being operatively connected to said one of said members to provide relative rotation between said tray and water contacting means that transmits torque to said light transmitting means through the water in said tray means.

7. In a lawn sprinkler of the type having a stationary water conducting tubular member which supplies water to a sprinkler head member mounted thereon that is rotatably driven by water issuing therefrom and the issuing water from which is color illuminated by light transmitting means that is rotated relative to the tubular member by the sprinkler head; said sprinkler further having means operatively interpositioned between one of said members and said light transmitting means for regulating its speed of rotation and comprising: generally horizontally positioned tray means positioned beneath said light transmitting means to receive water run off therefrom, and water contacting means extending down into said tray to provide a fluid coupling effect with water held in said tray, one of said means being carried by said light transmitting means and the other of said means being carried by said one of said members to provide relative rotation between said tray and water contacting means to transmit torque to said light transmitting means through the water in said tray.

8. A lawn sprinkler or the like comprising a pedestal member through which water may be conducted, a rotat-

able sprinkler head thereon having generally laterally projecting nozzles from which water is adapted to issue in a manner causing rotation of said sprinkler head, stationary light producing means positioned beneath said head and extending around said pedestal member in a manner to substantially uniformly and simultaneously illuminate water issuing from said generally laterally projecting nozzles, a colored light transmitting hood structure having a centrally located opening therein through which said pedestal member extends rotatably positioned between said stationary light producing means and said generally laterally projecting nozzles, said hood structure being carried by said sprinkler head and extending around said pedestal member in a manner covering said light producing means, a stationary generally horizontal annular cup-shaped tray extending about and being carried by said pedestal member in a manner to receive water run-off from said hood structure, and means carried by said hood structure and projecting into said annular cup-shaped tray in a manner to contact water therein and provide a fluid coupling effect between said last-mentioned means and said tray which retards the speed of rotation of said hood structure.

9. A lighting attachment for sprinklers of the type having a pedestal member rotatably supporting a sprinkler head member that is provided with laterally projecting arms from which water is sprayed in a manner causing rotation of the sprinkler head member, said attachment comprising: light producing means positionable around said pedestal member beneath said sprinkler head arms to simultaneously illuminate water issuing from the arms of the sprinkler, a generally dome-shaped colored light transmitting hood structure having an opening centrally located therein through which said pedestal member is adapted to extend, said hood structure being positionable around said pedestal member between said light producing means and said sprinkler arms, fastening means for attaching said hood structure to the sprinkler head member to support and rotate said hood structure, an annular cup-shaped tray for positioning generally horizontally about said pedestal member and constructed and arranged to be filled with water issuing from said sprinkler, and means carried by said hood structure and constructed and arranged to project down into said tray to engage water therein and provide a fluid coupling effect between said last mentioned means and said tray which will retard the speed of rotation of the hood structure.

10. In a lawn sprinkler of the type having a stationary axially extending water conducting tubular member which supplies water to a sprinkler head member mounted thereon and that is rotatably driven by water issuing therefrom; stationary lights supported generally coaxially with respect to said pedestal member and spaced apart from the sprinkler head member, a colored light transmitting hood covering said lights, and a torque transmitting fluid coupling operatively interpositioned between said hood structure and one of said members, said fluid coupling comprising a first annular surface means positioned coaxially with respect to said sprinkler head and on which water is supported, said surface being flooded by water issuing from said sprinkler, and means connected to rotate coaxially relative to and above said first annular surface to contact the water supported on said first annular surface means, one of said means being carried by said hood structure and the other of said means being carried by one of said pedestal and tubular members, and whereby the water supported on said first means is contacted by said second means to provide a fluid coupling effect.

References Cited in the file of this patent

UNITED STATES PATENTS

1,001,065	Mursch	Aug. 22, 1911
1,642,910	Thompson	Sept. 20, 1927
1,837,732	Stabler	Dec. 22, 1931
1,953,837	Thorold et al.	Apr. 3, 1934
1,982,315	Lundberg	Nov. 27, 1934
2,537,048	Giblet	Jan. 9, 1951
2,593,517	Angulo	Apr. 22, 1952
2,683,620	Keech	July 13, 1954

FOREIGN PATENTS

487,951	Italy	Dec. 11, 1953