Jan. 1, 1929. 1,697,203

L. R. NELSON

LAWN SPRINKLER

Filed Dec. 16, 1925

FIG. 1.

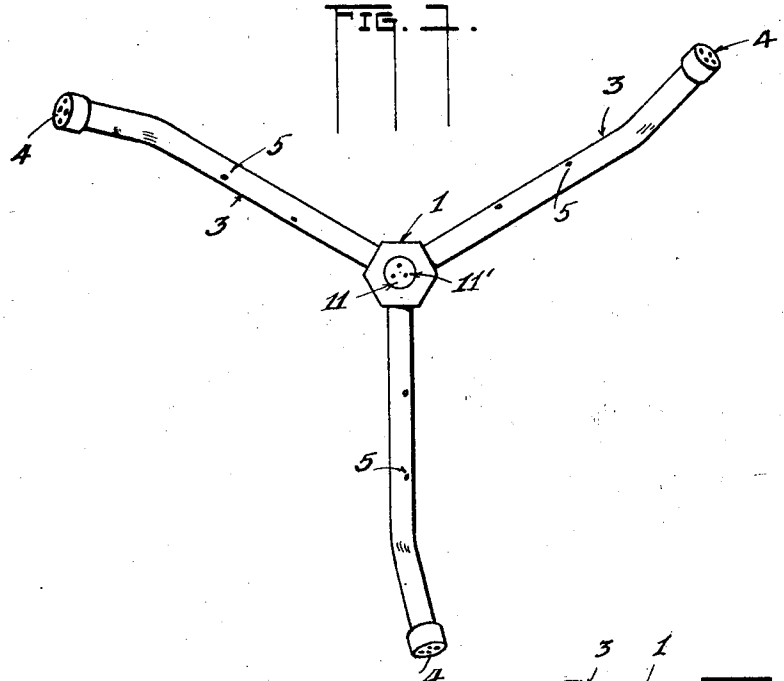


FIG. 2.

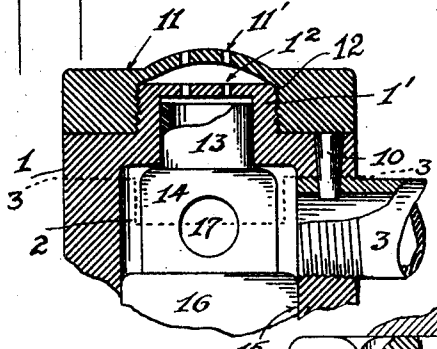


FIG. 3.

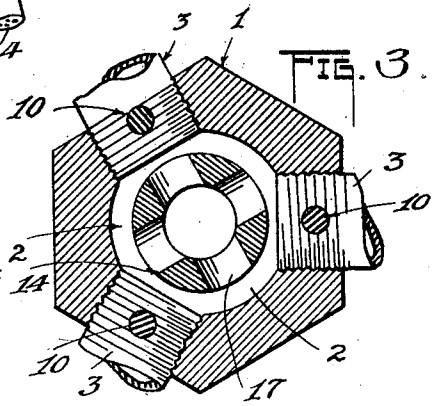
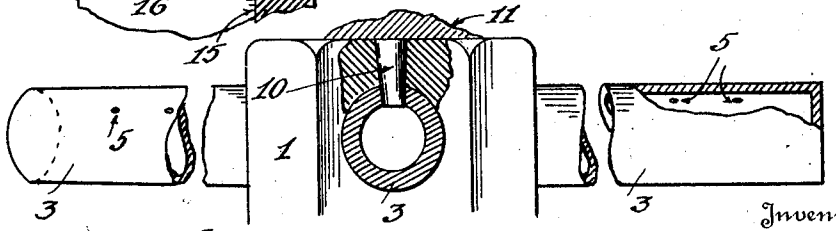


FIG. 4.



Inventor

L. R. Nelson,

By L. W. Thurlow

Attorney

Patented Jan. 1, 1929. 1,697,203

UNITED STATES PATENT OFFICE.

LEWEN R. NELSON, OF PEORIA, ILLINOIS.

LAWN SPRINKLER.

Application filed December 16, 1925. Serial No. 75,728.

This invention relates to improvements in lawn sprinklers of the rotary type. More particularly the invention has reference to a supported body adapted for rotation and having a series of hollow arms extending therefrom from which water is delivered.

The main object of the invention is to make provision for fixing each of the arms of the sprinkler at the required exact position with respect to the body, the means used being such that said arms cannot be changed in position either through accident or design.

Another object is the provision of a specially arranged means for thus securing the arms rigidly with respect to the body.

The invention consists also of certain details of construction believed to be novel, and to be pointed out herein.

In the appended drawing showing my invention,

Figure 1 is a plan of a sprinkler-body and a series of arms extending therefrom.

Figure 2 is a vertical section of a sprinkler-arm securing means.

Figure 3 is a horizontal section of the body on line 3—3, Figure 2, showing sprinkler-arms carried by and extending therefrom, and

Figure 4 is an elevation of part of the body and arms, parts of which are shown in section.

The sprinkler-body is indicated at 1. It is provided with a cavity 2 and has a series of hollow arms 3 extending therefrom each of which may be perforated at its outer or free end as at 4, or it may have perforations 5 therealong, or both of these ways may be used. Said arms are preferably screwed into the walls of the body so that their bores can communicate with the cavity 2 thereof, this, however, being common practice. Extending from the top of the body is a cavitied projection 1′ which may have perforations 1^2 therein.

Due to the form of the arms in sprinklers of this type, wherein the outer extremities thereof are either bent at an angle to the plane of rotation and perforated as shown at 4, or where said arms may be straight as in Figure 4 and perforated as at 5, it is necessary to secure them at a certain exact position with respect to the body so that the perforations will have the proper angle of inclination to cause the best operation of the sprinkler and bring about the greatest gain in the amount of ground territory sprinkled.

It has been customary, after determining the proper position an arm should occupy, to employ any one of several methods of securing it relatively to the body. One of these methods is the use of a screw carried in the body whose point is made to engage the arm by friction. Another method makes use of a lock-nut on the threads of the arm and brought up against said body, while the soldering method has also been resorted to. None of these ways, however, have been found to provide for permanently holding the arm since it is often loosened even in ordinary handling of the sprinkler. Furthermore, persons having no knowledge of the reasons for an exact setting of the arms can easily rotate them in the body and thus destroy the usefulness of the sprinkler. Unless, therefore, an absolutely positive method of holding the arms is used the utility of the sprinkler is greatly impaired or wholly destroyed.

In view of this situation it is my purpose to provide a structure that will permanently set the arms just at the required position so that no amount of rough handling or intentional strain on said arms can turn them in their seats.

My method is to employ a pin such as is shown at 10, for example, Figures 2, 3 and 4, tapering the same, as well as the holes to receive it, so that a snug driving fit in the body and arm is the result. I preferably provide a capping plate 11, said plate having a central threaded bore 12 adapted to be screwed upon the described projection 1′ threaded for the purpose, and said plate is so formed as to overlie the ends of the several pins 10 where they extend to the surface of the head or body thus holding them in their seats. The contacting faces of the plate and body preferably form a ground joint and prevent leakage of water around the pins.

It is clear that a very positive manner of holding the arms from rotation in the body is furnished by the construction described and shown or any equivalent thereof, there being no way of accomplishing this except a joining member between the arm and body to extend into both.

That the advantage and importance of such a method may be thoroughly appreciated it may be stated that the proper position of the arm with respect to the rotating body is a critical one and any slight deviation therefrom results in failure of the device to properly function.

The cavity in the said projection 1′ forms a bearing for the upper end 13 of a tubular supporting fitting 14 about which the body rotates, while the lower end, or skirt portion of said body, has an enlarged bore 15 whose walls have a smooth turning fit on an enlargement 16 of said fitting forming a bearing for the latter. The fitting intermediate the enlargement 16 and the upper end 13 is spaced from the walls of the cavity 2 so that the annular space thus provided receives and distributes the water issuing from holes 17 in said fitting to the arms 3 and, as may be seen, the capping plate 11 being perforated at 11′ permits water jets to issue therefrom discharged from the perforations 1^2 of the projection 1′.

I claim—

1. In a sprinkler, a sprinkler-head including a cavity, a tubular sprinkler-arm extending into the head communicating with the cavity, a member extending through the head into said arm fixing the two relatively, and means seated on the member holding it in the arm engaging position.

2. In a sprinkler, a sprinkler-head mounted to rotate including a cavity, a tubular arm carried by the head communicating with the cavity, a member carried in one of the walls of the head, and extending into the arm securing the two relatively rigid, and means mounted on the head seated upon the member for holding the latter in a fixed arm-securing position.

3. In a sprinkler, a sprinkler-head mounted to rotate including a cavity, a tubular arm carried by the head communicating with the cavity, a member carried in one of the walls of the head and extending into the arm securing the two relatively rigid at a given angle of inclination of said arm, and means adjustably secured on the head adapted to seat upon the member in the arm engaging position.

4. In a sprinkler, a sprinkler-head mounted to rotate including a cavity, a tubular arm carried by the head communicating with the cavity, a member carried in one of the walls of the head and extending into the arm securing the two relatively rigid at a given angle of inclination of said arm, and a plate having threaded engagement with the head adapted to seat upon and hold the member in position to fix said arm in positive fixed relation in said head.

5. In a sprinkler, a rotatably mounted cavitied sprinkler-head having an extension on one of its walls, a tubular arm seated in one of the other walls of said head, a member insertable in the sprinkler-head and extending into said arm securing the two relatively, and a plate adapted to engage over the extension and to overlie the member for holding the same in position.

6. In a sprinkler, a rotatably mounted hollow sprinkler-head having a threaded extension on one of its walls, a tubular arm perforated at one end and at its other end seated in a wall of the head, there being an aperture in the head and an aperture in the arm adapted to register with that of the head, a member disposed in the aperture of both the head and arm and having a terminal end upon the wall of the head having said extension, and a plate having threaded engagement with the said extension adapted to seat upon the said terminal end of the member holding the same in said apertures.

7. In a sprinkler, a sprinkler-head mounted for rotation having therein a lower large cavity and an upper smaller communicating cavity, a tubular supporting fitting having two different diameters seated in said cavities forming a bearing for said head, the periphery of said fitting within the larger, being spaced from the walls of such cavity and having a water outlet into the latter, a series of tubular sprinkler arms extending into the head communicating with the large cavity, a member mounted in the head at each arm and extending into each of them, and means threaded on the head adapted to bear upon the members for holding them in their arm engaging positions.

8. In a sprinkler, a sprinkler-head mounted for rotation having therein a lower larger cavity and an upper smaller communicating cavity, a tubular fitting having two different diameters seated in said cavities forming a support and bearing for the head, the periphery of said fitting within the large cavity being spaced from the cavity walls, and also having a water outlet into the cavity, a series of tubular sprinkler arms extending into the head communicating with the large cavity, a member mounted in the head at each arm extending into each of the latter, and means threaded on the head adapted to seat upon the members, said means having perforations therein.

In testimony whereof I affix my signature.

LEWEN R. NELSON.