June 26, 1934. R. R. SUMNER 1,964,225

LAWN SPRINKLER

Filed Dec. 23, 1932

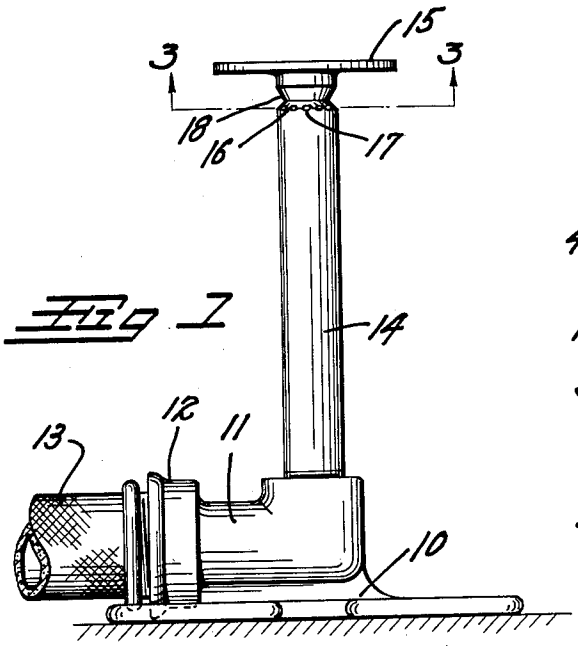


Fig 1

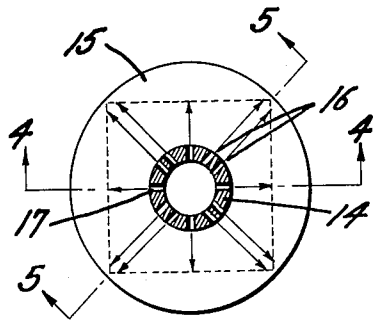


Fig 3

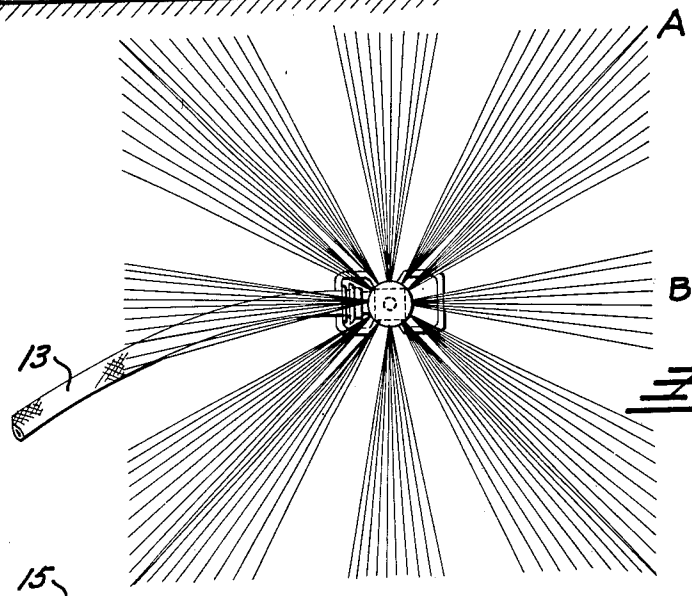


Fig 2.

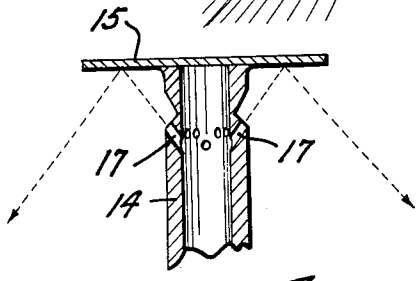


Fig 4

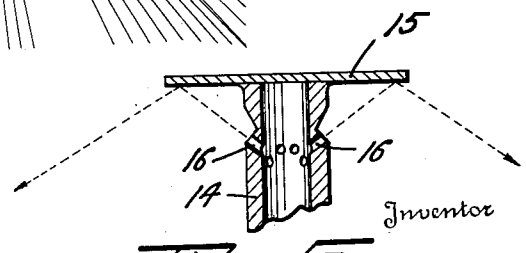


Fig 5

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LAWN SPRINKLER

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3 Claims. (Cl. 299—18)

This invention relates to a lawn sprinkler and has for its principal object the provision of a sprinkler which will efficiently sprinkle a rectangular plot without throwing water beyond the borders thereof.

Another object is to provide a sprinkler construction which can be utilized to provide a sprinkler covering a plot of any given shape.

Other objects and advantages reside in the detail construction of the invention, which is designed for simplicity, economy, and efficiency. These will become more apparent from the following description.

In the following detailed description of the invention reference is had to the accompanying drawing which forms a part hereof. Like numerals refer to like parts in all views of the drawing and throughout the description.

In the drawing:

Fig. 1 is a side elevation of the improved sprinkler.

Fig. 2 is a plan view illustrating the rectangular action thereof.

Fig. 3 is a cross section looking upward, taken on the line 3—3, Fig. 1.

Fig. 4 is a detail section through the head of the sprinkler taken on the line 4—4, Fig. 3.

Fig. 5 is a similar section taken on the line 5—5, Fig. 3.

The invention comprises a supporting base 10 provided with a suitable water passage 11, having a female coupling 12 for receiving the extremity of a sprinkling hose 13. The base 10 may be of any suitable design adaptable for receiving a hose extremity and solidly supporting the sprinkler.

The water passage 11 in the base 10 is arranged to receive and vertically support, a tubular standard 14 which terminates at its top in a horizontal distributing disc 15. A series of orifices are formed in the standard 14 immediately below the distributing disc 15. It is preferred to arrange these orifices as illustrated in Fig. 3. In this arrangement four pairs of orifices 16 are positioned diametrically opposite each other at 90° intervals, and four single orifices 17 are similarly positioned diametrically opposite each other at 90° intervals. One of the orifices 17 is thus positioned mid-way between each two pairs of the orifices 16.

These orifices may be drilled or otherwise formed in the standard 14. It has been found that the drilling thereof is greatly facilitated if a V-shaped notch 18 is first formed about the standard as illustrated, to form a support for the drill points. The notch 18 is simply to facilitate manufacture, and has no effect whatsoever upon the functioning of the sprinkler. The orifices discharge high velocity jets against the bottom of the distributing disc 15.

It is desired to call attention to the fact that the orifices 16 and 17 incline downwardly toward the hollow center of the standard 14. This incline or angle is one of the most important features of the invention. If all of the orifices 16 and 17 were inclined on a common angle, the jets discharging therefrom would strike the disc 15 in the outline of a circle and would be reflected about the standard 15 in a circle, as is usual in the common ordinary garden variety of sprinklers. It can be readily seen that if the orifices are inclined at a relatively steep angle, the jets will strike the disc 16 relatively close to the standard 14 and be reflected downwardly at a similar angle relatively close to the base 10. Conversely, if the orifices are formed upon a relatively gradual angle, the water will strike the disc 15 adjacent its periphery, and will be reflected outwardly at a gradual angle and at a greater distance from the base 10.

In view of the above, a structure has been provided by which the relative distance the water is thrown at given points about the disc can be accurately controlled by the relative angle between the orifices projecting the water. It is this principle that is employed to obtain the square sprinkling effect for which this invention is designed. The orifices 16 are intended to throw the water toward the corners of the square as indicated at A, Fig. 2. They therefore must have a more gradual angle, as shown in Fig. 5, than the orifices 17. The orifices 17 are designed to project their water toward the sides of the square, which of course is a shorter distance as indicated at B, Fig. 2. Their angle must therefore be steeper as shown in Fig. 4.

With the angles so designed, the water will strike the disc in the outline of a square, as shown in Fig. 3 and will be deflected outwardly in substantially a square as shown in Fig. 2. The above could be accomplished with simply eight orifices, four at one angle, or incline and four at another. The effect, however, is found to be more nearly perfect if the orifices which are designed to reach the greatest distance are formed in pairs as shown in Fig. 3. These, of course, must necessarily cover a larger area, and it has been found that the reflected jets from the two openings of the pair impinge against each other

to form a relatively strong central stream in the exact corners of the square.

In Fig. 2 the various reflected jets have been indicated by several series of radial lines, and have been shown separated from each other for the sake of clearness. It is, of course, understood that when the jets from the orifices strike the distributing plate 15, they will be so spread and diffused as to intermingle and leave no open spaces in the sprinkled area.

I have shown from the above that the orifices may be inclined to provide a sprinkler which will cover an area of any desired shape. It need not be square, and could be made to cover an oblong area by forming the orifices at two sides with more gradual angle than the orifices at the remaining two sides, and any desired number of orifices may be employed. The distance from the disc 15 to the orifices is not important, however, by positioning the orifices as close to the disc as possible, the size of the disc can be reduced so as to lessen weight and manufacturing costs.

It is desired to call attention to the fact that with this sprinkler, the water is not thrown upwardly into the air in a high arc as is usual with lawn sprinklers. It is, therefore, not carried by the wind or air currents beyond the desired area. The water will be deflected outwardly and downwardly from the standard 14, and is but little affected by wind.

While a specific form of the improvement has been described and illustrated herein, it is desired to be understood that the same may be varied, within the scope of the appended claims, without departing from the spirit of the invention.

Having thus described the invention, what is claimed and desired secured by Letters Patent is:—

1. A sprinkler comprising: a vertical tubular standard; means for supplying water to said standard; a distributing disc projecting outwardly from said standard; and a series of orifices in said standard below said disc, said orifices being inclined so as to project water upwardly against said disc in an outline similar to the outline of the area to be sprinkled.

2. A sprinkler for sprinkling a rectangular area comprising: a vertical tubular standard; a distributing disc supported adjacent the top of said standard; a first series of inclined orifices in said standard below said disc; a second series of inclined orifices in said standard below said disc, the orifices of said second series being inclined at a more gradual angle than said first series so that their projected jets will strike said disc at a greater distance from said standard than the jets projected by said first series so as to be deflected toward the corners of said rectangular area.

3. A sprinkler for sprinkling a rectangular area comprising: a vertical tubular standard; a distributing disc supported adjacent the top of said standard; a first series of inclined orifices in said standard below said disc; a second series of inclined orifices in said standard below said disc, the orifices of said second series being inclined at a more gradual angle than said first series so that their projected jets will strike said disc at a greater distance from said standard than the jets projected by said first series so as to be deflected toward the corners of said rectangular area, the orifices in said second series being positioned in pairs as described.

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