Sept. 23, 1930. C. C. ARMSTRONG 1,776,714

LAWN SPRINKLER

Filed Jan. 29, 1929

Fig. 1.

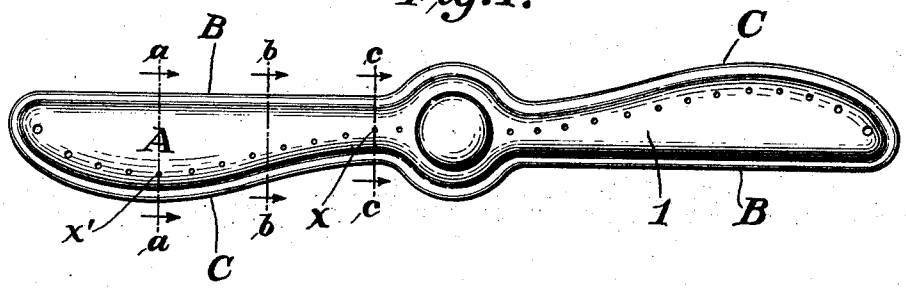


Fig. 2.

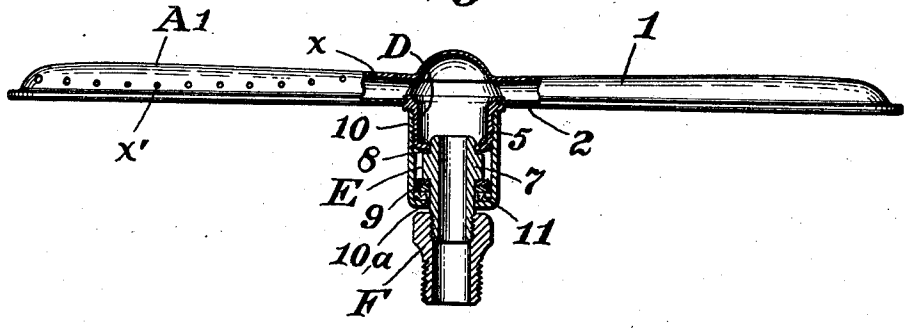


Fig. 3.

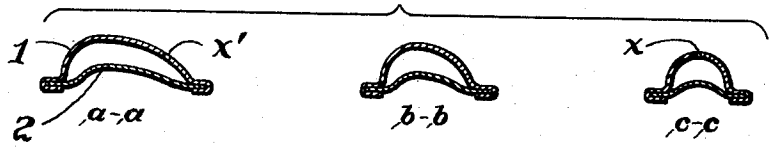
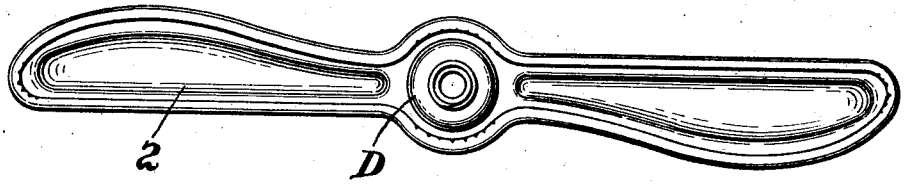


Fig. 4.



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UNITED STATES PATENT OFFICE

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LAWN SPRINKLER

Application filed January 29, 1929. Serial No. 335,858.

The invention consists in the features and combination and arrangement of parts hereinafter described and particularly pointed out in the claims.

In the drawings:

Figure 1 is a plan view of the lawn sprinkler.

Fig. 2 is a side elevation, partly in section.

Fig. 3 illustrates transverse sections taken at various points *a*—*a*, *b*—*b*, *c*—*c*.

Fig. 4 is a bottom plan of the sprinkler.

The vane of the sprinkler is made up of an upper sheet metal plate 1, the edge of which is spun over the bottom sheet metal plate 2.

The vane arms increase in width from the axial center of the sprinkler towards their outer ends, being of greatest width at the point A, from which point the width of the vane decreases progressively to its extreme outer end.

The vane has one edge B of each arm straight and the other edge C shaped on a compound curve, and the straight edge of one arm is diagonally opposite the straight edge of the other arm. The upper and lower plates of the arms are arched transversely thereof. The arch of the lower plate is for the purpose of strengthening the same against the pressure of water, which enters the arm through the centrally disposed head D rotatably mounted on the fitting E through which water is conducted to the vane through the supply connection F.

The transverse arch formation conforms to the varying widths of the vane arms at various points. In other words, the arch formation near the center of the sprinkler is struck on a short radius, while the arch formation at, say, the point A is struck on what may be conveniently described as a long radius, though it will be understood that the arch is not, as a matter of fact, struck on a curve which is a true segment of a circle. The height of the arch varies, it being of less height near the center of the sprinkler than at the outer portions of the arms. Its greatest height is at about the point A′, and its increase in height from the inner end of the vane arm to the point A′ is gradual. To describe the formation in another way, it may be said that at the inner end of the arm the wall of the arched formation is steeply inclined, or curved, whereas at the widest point A the wall of the arch is at a lower angle to the horizontal and particularly on the compound curved side of the arm, and the steepness of the raised wall along this compound edge decreases gradually from the inner end of the arm to the point A. Along the straight side of the arm the arched curve is abrupt. The row of perforations for the discharge of the water follows the compound curved side of the vane arm, and at all points the said perforations are at approximately the same distance from the said edge. In making the upper plate of the vane, the perforations are first punched in the plate and thereafter the plate is shaped up into the arch form shown and because of the progressive variation in the shape of the arch different directions of delivery take place.

In other words, the water is directed at varying levels, the innermost opening delivering its stream directly upward. Furthermore, by reason of the curve from point A to the extreme end of the arm being reversed in respect to the other parts of the compound curve resulting in a substantially tapering formation at the end of the arm, and because the row of openings follows the curve of the arm at this point, the delivery of the streams from, say, the last three openings, will be in a different direction (or outwardly from the arm) in respect to the direction of the streams from the other openings. The relative distance of the openings from the longitudinal center line of the arm, together with the curve of the wall of the arch, also enters into the matter of stream direction. The openings at or near the extreme outer ends of the arms are larger in diameter than the other openings.

The vane has attached at its center a head D in the form of a sheet metal cup-shaped member, the bottom flange 5 of which turns upon a fitting E. This fitting is enlarged at 7, forming upper and lower shoulders 8—9. The hollow cup-shaped head has its

flange rotatively mounted on the fitting above said shoulder 8.

A second member 10 is screw threaded upon the cup-shaped head and has a flange 10ª reaching under the lower shoulder 9 with packing interposed at 11. This gives a two point bearing to the central rotating part of the sprinkler. The fitting screws into any suitable nipple F which connects with the hose or supply pipe.

I claim:

1. A lawn sprinkler comprising elongated hollow arms of sheet metal, radiating from a central rotatable head through which the arms are supplied with water, said arms increasing in width from said head outwardly and having their upper arms arched transversely, the width of said arched portion increasing towards the outer ends of the arms, and being formed on curves of progressively longer radii towards said outer ends, one edge of each arm being curved between its inner and outer ends and the upper wall thereof having a row of perforations located approximately at the same distance throughout from said curved edge, whereby the axes of said perforations are at relatively different angles to distribute the streams of water issuing therefrom.

2. A lawn sprinkler according to claim 1 having radiating hollow vane arms of arched formation in cross section, one edge of each vane arm being straight and the other edge is in the shape of a compound curve, the arch formation at all points along the arm extending from the straight edge to the compound curved edge and a row of perforations following the said compound curved edge, substantially as described.

3. In the formation of a lawn sprinkler vane, the herein described method consisting in perforating a plate with a row of openings along a compound curve and then upsetting said plate into arched form of increasing width, intermediate its ends, and of a shape along one edge conforming to the compound curve of the row of openings.

In testimony whereof I affix my signature.

CHARLES C. ARMSTRONG.