W. VAN E. THOMPSON.

SPRINKLER HEAD.

APPLICATION FILED SEPT. 2, 1914.

1,187,401. Patented June 13, 1916.

Fig. 1

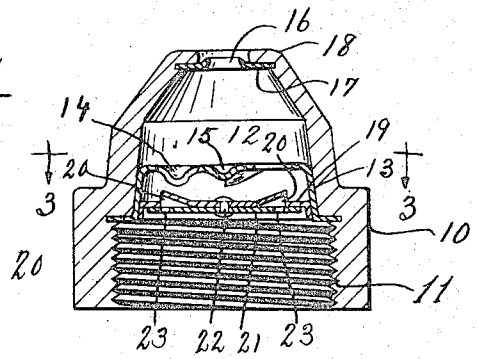


Fig. 2.

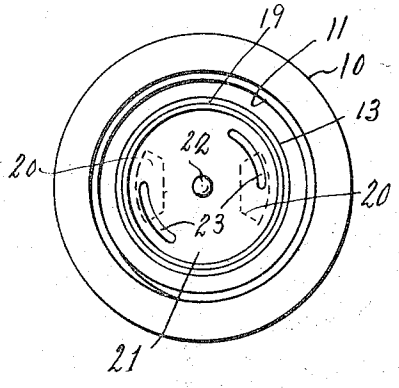
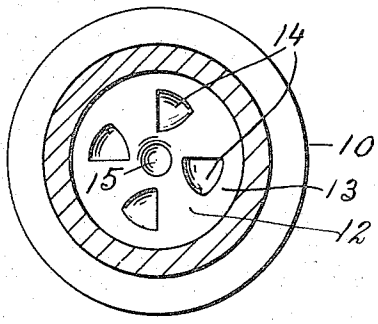


Fig. 3.



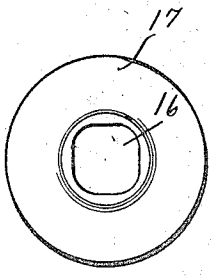


Fig. 4.

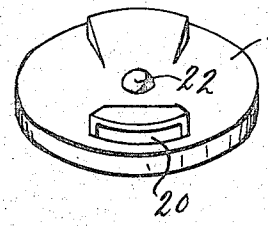


Fig. 5.

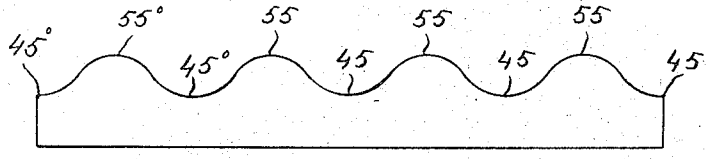


Fig. 6.

WITNESSES.

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SPRINKLER-HEAD.

1,187,401. Specification of Letters Patent. Patented June 13, 1916.

Application filed September 2, 1914. Serial No. 859,774.

To all whom it may concern:

Be it known that I, WALTER VAN E. THOMPSON, a citizen of the United States, residing at the city of Los Angeles, in the county of Los Angeles and State of California, have invented new and useful Improvements in Sprinkler-Heads, of which the following is a specification.

My invention relates to a sprinkler head in which the water enters a spraying chamber which is circular in horizontal cross section at ports which are tangential to the circular walls of the chamber and issues from such chamber at a single port in the top wall of the chamber and the object thereof is to so arrange the central outlet that the water issuing therefrom will fall evenly all around and if desired upon a practically square surface of ground; a further object is to regulate the flow of water in the sprinkler head.

In the drawings forming a part of this application: Figure 1 is a central vertical section of a sprinkler head for sprinkling a square surface. Fig. 2 is a bottom plan of the head. Fig. 3 is a horizontal section of the head on the line 3—3 of Fig. 1. Fig. 4 is an enlarged top plan of the outlet plate separate from the other parts of the head. Fig. 5 is a perspective top view of the regulator. Fig. 6 is an enlarged development of the edge of the water orifice of the top plate.

In the drawings 10 is the body of the sprinkler head which is of any suitable metal but is preferably made of the usual composition metal from which lawn sprinklers are cast. The bottom of the head has internal screw threads 11 for attachment to a pipe or hose. In the drawings the head illustrated is designed for attachment to a vertical pipe. A suitably constructed L-fitting (not shown) would be required for attaching the head to a hose. Above the threads the interior of the body is slightly contracted and forms the spray chamber 12. In the bottom of the spray chamber is a port plate 13 which is preferably made of sheet metal pressed to the form shown in the drawings and secured in the body when the same is cast. The port plate has one or more inlet ports 14 which are tangential to the vertical walls of the spray chamber and are formed by cutting slits in the plate and pressing the metal downwardly at one side of the slit.

In the drawings I have shown four of these ports as I prefer that number but a less number may be used. In the center of the port plate and directly below the outlet from the spray chamber is a small depression 15 which forms what I term a directing well. This well is in vertical alinement with the outlet port and keeps the water centrally located in the spray chamber so that it will issue from the outlet port evenly all around the same. The outlet port 16 is located in the center of an outlet port plate 17 in the top wall 18 of the spray chamber and is formed in a piece of sheet metal as follows: For a small size sprinkler head I take a disk of Number 22 sheet brass about three quarters of an inch in diameter and punch a central hole one quarter of an inch in diameter therein. With another tool I press the metal around the hole outwardly as follows: At four points equally spaced apart the metal is pressed to an angle of fifty five degrees. At the four points intermediate the first four points the metal is pressed to an angle of forty-five degrees thereby forming an outlet port which presents to the eye the appearance of a square port with rounded corners. That portion of the outlet port plate which is pressed outwardly will be called the outlet port ledge and is about one-sixteenth of an inch wide and about one sixteenth of an inch high. The outlet port plate is preferably secured in place when the body is cast. The change of the angles of the ledge is gradual from forty-five to fifty-five degrees as illustrated in Fig. 6. If a larger outlet port is desired a corresponding increase in the width and height of the outlet ledge is made. By making a single side tangential inlet into the spray chamber, plate 13 could be omitted. In such case the depression 15 would be formed in the bottom wall of the spray chamber. I prefer the use of the bottom plate 13. To regulate the quantity of water admitted into the spray chamber I provide a regulator which consists of a cup shaped top plate 19 in the top of which two oppositely and preferably circular shaped slits 20 are cut and the metal is pressed upwardly to form outlets for the passage of water therethrough. A circular disk 21 is revolubly mounted in the cup by a pivot 22 which passes through both and is headed to hold them from separating. Disks 21 has two ports 23 which are brought into full register with the outlets in plate 19 when a

full supply of water is desired or turned partly or wholly out of register when a partial or no supply of water is desired. Where a round surface is to be sprinkled the outlet port is round but the ledge slopes at an angle of about forty-five degrees.

Having described my invention what I claim is:

1. In a sprinkler, a head having a circular spray chamber; a top wall for said spray chamber having an outlet port, the walls surrounding said outlet port being formed by a ledge sloping upwardly at four equally spaced apart different points at an angle substantially fifty-five degrees to a plane at right angles to the axis of said outlet port and at four other points alternating with and equidistant from said first four points sloping upwardly at an angle substantially forty-five degrees to a plane at right angles to the axis of said outlet port and the intermediate portions of said ledge between successive mentioned points sloping at such different angles as will cause said outlet port to be substantially rectangular; and a plate forming the bottom of said spray chamber, said plate having a plurality of tangential inlet ports.

2. In a sprinkler, a head having an outlet port in the top, and the bottom portion interiorly threaded; a port plate mounted in said head above the threaded portion, said port plane having a plurality of tangential inlet ports and a central well; a regulator mounted in said head below said port plate, said regulator comprising a top plate having ports therein and a revoluble disk mounted on the lower side of said top plate of the regulator, said disk having ports adapted to be brought into register with the ports in the top plate whereby the water may be regulated or shut off by said disk.

3. In a sprinkler head having a spray chamber with tangential inlets, an outlet port of substantially rectangular outline with rounded corners, said outlet port being surrounded by an upwardly projecting angular ledge, the angle of the ledge at the corners being substantially fifty-five degrees and the angles at the midway points between the corners being substantially forty-five degrees to a plane at right angles to the axis of the outlet port.

In witness that I claim the foregoing I have hereunto subscribed my name this 24th day of August, 1914.

WALTER VAN E. THOMPSON.

Witnesses:

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FRANK WATERFIELD.