

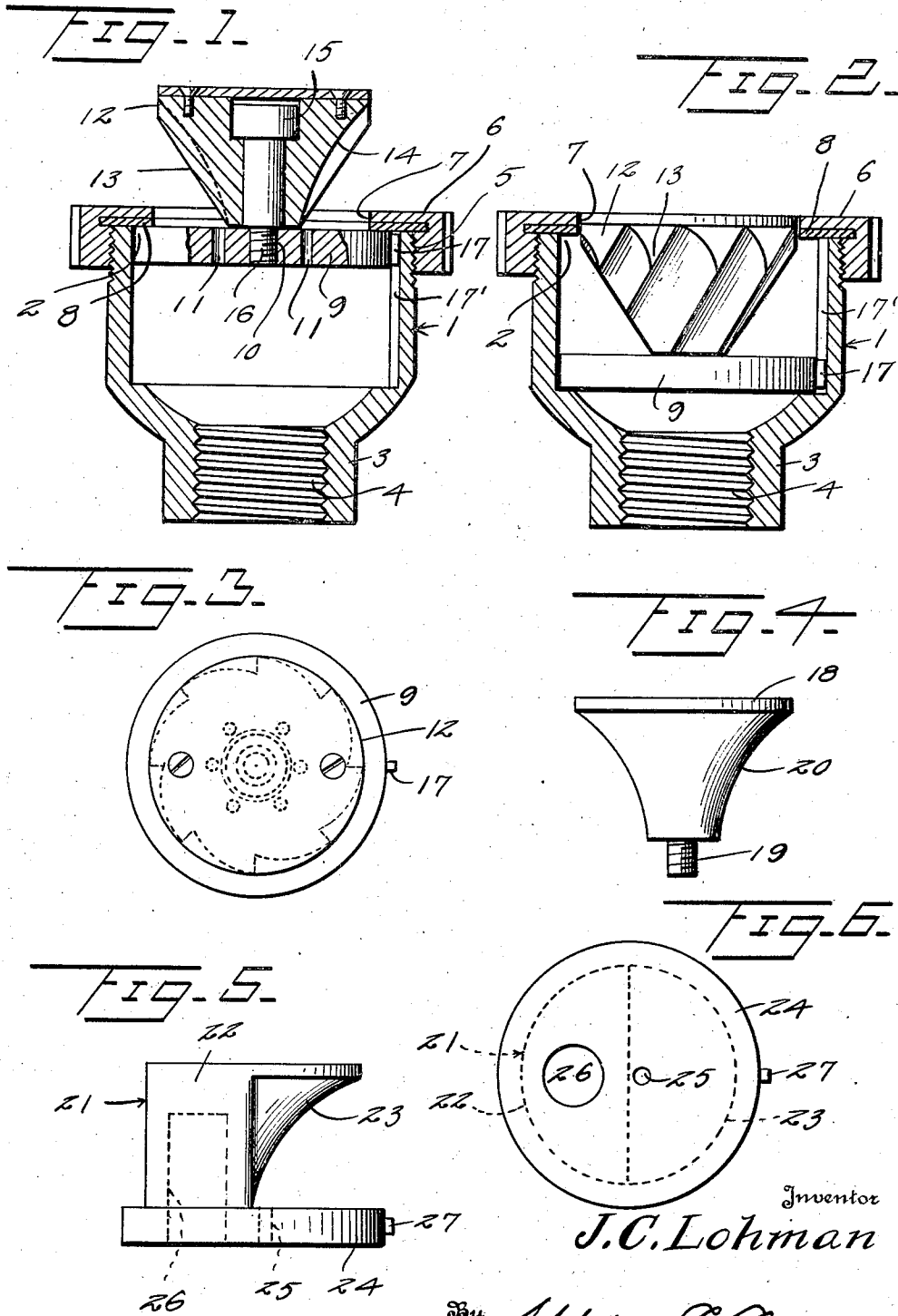
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SPRINKLER HEAD

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SPRINKLER HEAD

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This invention relates to a sprinkler device and pertains particularly to an improved type of sprinkler head.

The primary object of the present invention is to provide an automatically operating sprinkler head designed to be used either in association with underground sprinkler systems or upon a suitable movable base.

Another object of the invention is to provide a sprinkler head in which the water diffusing unit may be readily removed for cleaning or to be substituted by another type of unit.

A still further object of the invention is to provide a water sprinkler head which will automatically open when the water is injected therinto and after cut off the water supply will close to prevent the entrance of foreign matter.

The invention will be best understood from a consideration of the following detailed description taken in connection with the accompanying drawing forming part of this specification, with the understanding, however that the invention is not confined to any strict conformity with the showing of the drawing but may be changed or modified so long as such changes or modifications mark no material departure from the salient features of the invention as expressed in the appended claims.

In the drawing:—

Figure 1 is a vertical sectional view of the sprinkler head embodying the present invention, showing one form of diffuser associated therewith;

Figure 2 is a view similar to Figure 1 showing the diffuser seated in the head;

Figure 3 is a top plan view of the whirling diffuser;

Figure 4 is an elevational view of a modified form of water diffuser;

Figure 5 is a side elevational view of a further modification, and

Figure 6 is a top plan view of the diffuser of the type shown in Figure 5.

Referring to the drawing in detail, the numeral 1 indicates generally a casing which constitutes the head proper of the sprinkler, this head being open at one end as indicated

at 2, the opposite end being reduced as indicated at 3 and provided with interior threads 4 to facilitate attaching the head to a supply pipe. The larger or upper end of the head 1 is exteriorly threaded as indicated at 5 to receive a flanged cap 6 through the center of which a relatively large aperture 7 is formed. This cap 6 has interposed between it and the top edge of the head 1 a suitable washer 8 against which a portion of the water diffusing unit hereinafter described, abuts when it is forced to the upper part of the casing.

In Figure 1 one type of diffusing unit is shown which comprises an annular plate 9 designed to snugly fit within the head 1 for vertical reciprocatory movement therein.

This plate is provided with a centrally threaded opening 10 surrounded by a series of equi-distantly spaced relatively small apertures 11.

Designed to be mounted upon the plate 9 is an inverted frusto-conical body 12, the pivoted surface 13 of which is provided with a series of longitudinally and spirally extending flutes 14. The area of that portion of the body 12 abutting the plate 9 is smaller than the area defined by the annular series of apertures 11 so that streams of water passing upwardly through the apertures 11 will be directed against the inclined surface 13 of the body 12 and would pass upwardly therealong along the flutes 14 acting to rotate the body about the pin 15 which passes longitudinally therethrough and engages at its lower end 16 in the threaded central opening 10 of the plate 9.

The circumference of the top portion of the body 12 is such as to permit the body to snugly fit in the opening 7 of the casing cap 6, thus after a stream of water which has been opened into the casing head 1 and which has forced the plate 9 upwardly to the top of the casing in the manner shown, has been cut off, the plate 9 and the body 12 will drop until the plate reaches the bottom portion of the head, whereupon the upper edge of the body 12 will snugly fit within the opening 7 and close the same against the entrance of foreign matter.

Suitable means may be provided for preventing the body 9 from turning in the casing head, while the body 12 is rotating thereon, such for example as a lug 17 formed on the edge of the disk to move in a suitable slot 17' formed in the inner wall surface of the casing head.

In Figure 4, a modified form of the unit 12 is shown and indicated by the numeral 18. In this form the unit is of substantially frusto-conical design and arranged in inverted position upon the plate 9, the lower portion thereof having a threaded pin 19 projecting therefrom for engagement in the threaded aperture 10 of the plate. The surface of the wall of the unit 18 is concave as indicated at 20 and is smooth throughout so that when water is injected into the head and the plate 9 carrying the unit is forced upwardly the water escaping through the apertures 11 will flow over the smooth convexed surface to this unit and be projected in a smooth circular sheet.

In Figures 5 and 6, a still further modification of the units described to be mounted upon the plate 9 is shown, this modification being indicated by the numeral 21. In this form a semi-cylindrical body 22 has formed upon the flat side thereof an inverted half cone 23, the wall of which is concave like the wall of the cone 18.

A special form of plate 24 is provided to carry the half cone structure 23, this special plate having a single water outlet aperture formed therethrough as at 25 which is located to discharge against the concave under surface of the half cone carried by the plate, in the manner shown. In order to lighten the construction of this unit, the plate and semi-cylindrical portion 22 is provided with a bore 26 extending from the under side of the plate upwardly. A pin 27 is also carried by the plate 24 upon its periphery for engagement in the slot 17' of the casing wall to prevent the unit from rotating.

The unit 21 is designed for use in sprinkling shrubs or plants where it is desirable that the water be directed in one direction only and, as it will be readily seen, with this unit, a half circular smooth sheet of water will be ejected from the device over the selected area.

From the foregoing description, it will be readily appreciated that with a sprinkler head of the character herein described, a whirling spray or solid sheet of water may be employed as desired without trouble for the cap 6 may be readily removed to replace one unit with another. It will also be apparent that if one unit is used frequently it may be lifted in position and after the supply of water is cut off from the head, it will gravitate downwardly thereinto and close the outlet opening through the cap of the head, thus completely protecting the interior thereof until further use of the device is desired.

Having thus described my invention, what I claim is:—

1. A sprinkler head of the character described comprising a casing head, a threaded cap for said casing head having an inwardly extending flange, a gasket interposed between the flange and the outer end of the casing head, an apertured plate loosely mounted within the casing head, and water spreading means pivotally mounted on said apertured plate.

2. A sprinkler head of the character described comprising a casing head having an open top and a threaded open bottom, a flanged cap carried by said head at its outer end, a gasket interposed between the cap and the outer end of the casing head, an apertured plate slidably mounted in said casing head, said plate being adapted to engage said gasket when forced upwardly whereby to close the open top of said casing head water tight, and an inverted frusto-conical water spreading body mounted on said plate.

3. A sprinkler head of the character described comprising a casing head, an apertured plate slidably mounted in said casing head, a flanged cap on the outer end of said casing head adapted to retain the plate within the casing head when it is forced upwardly, means interposed between the cap and the outer end of the casing head to prevent leakage of water about the inner edge of the flanged cap, a water spreading unit pivotally mounted on the plate, and a face plate carried by said water spreading unit whereby to protect the pivot from dirt.

In testimony whereof I hereunto affix my signature.

JOHN CURT LOHMAN.