

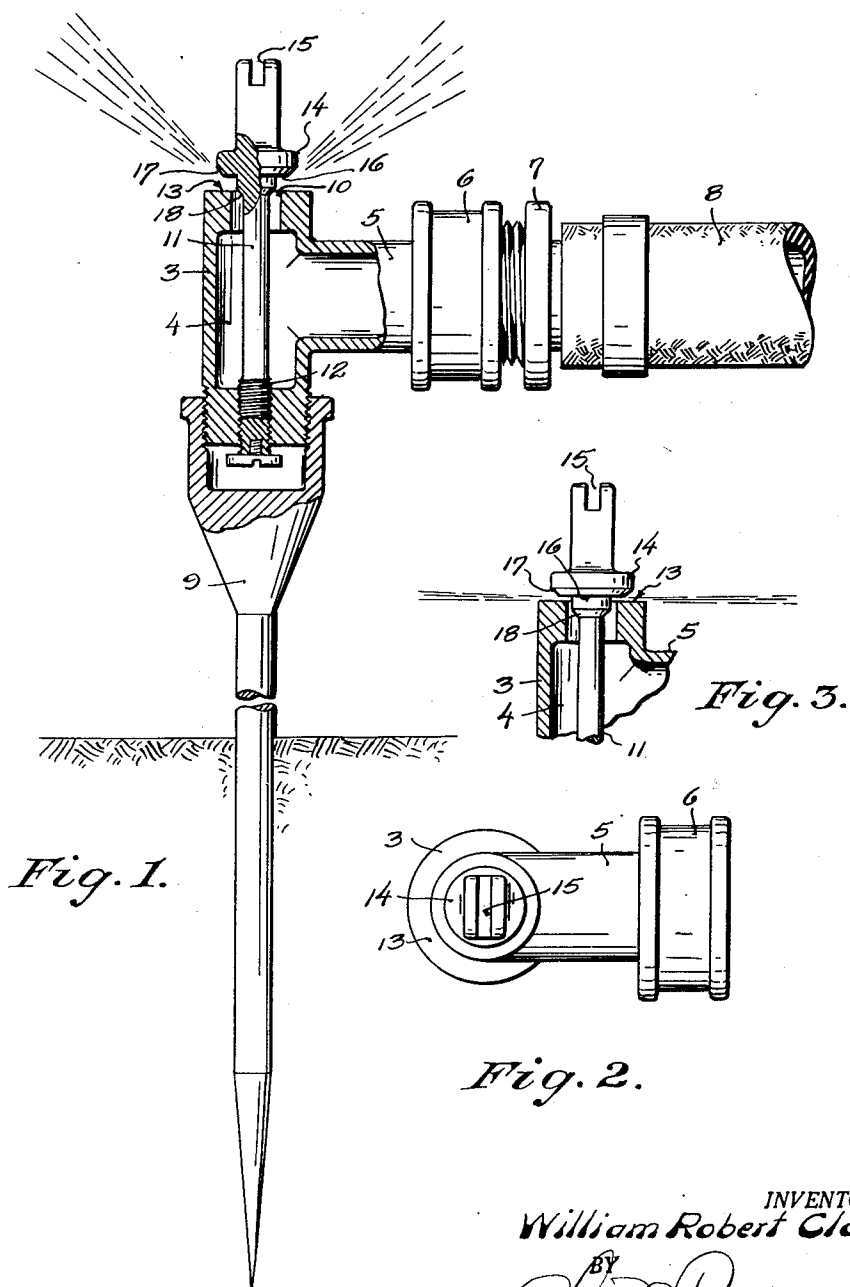
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LAWN SPRINKLER

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LAWN SPRINKLER

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1

This invention relates to the art of lawn sprinklers and as one of its objectives aims to provide a perfected sprinkler head and one, more especially, which will deliver water in a circular pattern and such as will spray the water outwardly along a flat course and in a finely divided state approximating a substantial mist. It has been long accepted that a mist-like delivery of the ejected water best accomplishes the lawn-sprinkling function for which sprinkler heads are primarily designed, and the advantages of a flat spray are two-fold, one to preclude undue dispersment in the presence of wind, and the other to permit underfoliage watering of shrubbery.

It is a further and important object to devise an adjustable sprinkler head which may be easily regulated to deliver either a flat mist spray or a fan-like coarse spray.

The particular design and arrangement of parts by which I accomplish the ends in view will become apparent in the course of the following description taken in connection with the accompanying drawing illustrating a typical embodiment of the invention. The invention consists in the novel construction and in the adaptation and combination of parts hereinafter described and claimed.

In said drawings:

Figure 1 is a view of my sprinkler head taken partly in longitudinal vertical section and partly in elevation, and showing fragmentarily a water hose attached thereto.

Fig. 2 is a top plan view of my improved sprinkler head shown detached from the water hose; and

Fig. 3 is a fragmentary longitudinal vertical sectional view representing the head as having been adjusted to deliver a fan spray as distinguished from the mist spray of Fig. 1.

Having reference to the drawing, the head provides a body member denoted by the numeral 3 formed in the nature of a T and so mounted as to place the cross-arm in a perpendicular position. This vertical member is of hollow construction to form a water chamber 4 therein, and connecting with the chamber to supply pressure water thereto is a side branch 5 carrying a suitable female fitting 6 arranged to be coupled with the male fitting 7 of a water hose 8. The lower end of the head is center-bored and threaded, and for mounting purposes the lower end is also provided with external threads which act to engage the mating threads of a socket formed

2

either upon a spike, as 9, or upon an ordinary stand, as may be desired.

Leading from the water chamber to the upper end of the body 3 and disposed in co-axial relation to said internally threaded bottom opening there is provided a bore 10, and received through this bore is a valve stem 11 formed on the lower end with screw threads 12 which work in the threads of the bottom opening. To freely accommodate the passage of the screw when assembling or dismantling the parts, the diameter of the bore 10 is somewhat larger than that of the screw.

The upper surface of the body, namely the face 13 which surrounds the outlet end of the bore, is ground substantially flat. This ground face functions as a valve seat, and the valve therefor, denoted 14, surmounts the stem and is made integral therewith. The valve is formed in the nature of a crowned bonnet, having its sides faced down at diametrically opposite sides to produce a finger grip and also presenting a slot 15 accommodating the reception of a screw driver or other like instrument, said screw-driver being employed to turn the valve where disuse during winter months may cause the valve to stick upon its seat.

The underside of the valve, like its seat 13, is ground substantially flat, and this flat face 16 extends somewhat beyond the perimeter of the bore whereat the same presents a bevelled face 17. The angle of bevel is desirably 45° from the axis of the stem. The stem itself is of a step-down nature describing a shoulder 18 subjacent to the face 16, and this shoulder is given a taper corresponding in its angularity to the angularity of the bevelled face 17. The placement of the shoulder is such that, were the shoulder to be prolonged, the bevelled face would be described in the inverted cone thereby produced.

My sprinkler head is designed primarily with the idea of accomplishing the projection of a substantially flat and mist-like spray while also allowing the head to be adjusted for the delivery of a coarser spray projected in what is commonly termed a cone pattern. To attain the mist spray, the operator sets the valve such as to produce only a thin crack between the valve face and its seat. Extensive tests apparently establish, in order to accomplish a horizontal projection of this mist-spray with a uniform delivery throughout the circumference of the circle being watered, that the face 16 of the valve must be substantially flat and be prolonged beyond the inner limit of the paralleling seat for only a

slight distance. When it is desired to modify the spray and produce the coarser cone-like delivery, the operator need only back off the valve in the degree desired, the pattern in this case being determined by the space which is allowed between the inner lip of the valve seat and an imagined cone the periphery of which would coincide with both the shoulder 18 and the bevel edge 17. As a means of limiting the backing-off movement of the valve, there is provided a headed screw which is threaded into the base of the valve stem and jammed tightly against the bottom face of the latter, the head 20 of this screw having a diameter exceeding that of screw 12. This headed screw can be removed for dismantling purposes only through the instrumentality of first unscrewing the body 3 from its mount.

I am cognizant of the existence of several sprinkler heads which profess an ability to deliver a flat spray of mist-like consistency but none of these heads are in actuality able to accomplish such end. This I attribute to the fact that these prior heads create disturbances within the head which adversely affect the uniform delivery of water. The feature of a valve having a bevelled perimeter and used in conjunction with a tapered shoulder applied to the stem of the valve and both placed on a coinciding slope, is especially desirable, the advantage lying in the fact that it accomplishes much the same pattern-determining effect for purposes of a conical fan spray as a solid cone of metal would achieve while at the same time, when used in conjunction with a flat valve seat lapping the bottom limit of the bevelled face retaining the functional advantage of the flat underside of the valve by making the slope of the shoulder ineffective to alter the course of the stream and thus allowing the delivered water to flow along the stem in a direction substantially parallel to its axis when the valve is screwed down to leave only a thin crack between the valve and its seat.

While I have illustrated only a detachable type of sprinkler head, it will be apparent that the invention readily adapts itself to use with imbedded pipes of a permanent sprinkler system, in which application the side branch would be deleted and the water fed from below through a severalty of waterflow ducts surrounding the threaded bore.

While I consider that the structural details of my sprinkler head are especially advantageous from the standpoint of simplicity in construction and for dismantling purposes, still it is my intention that no unnecessary limitations be implied by reason of having particularly described the preferred embodiment.

What I claim, is:

1. A sprinkler head comprising a hollow body

having an inlet opening for admission of pressure water into the chamber described within said body and having a circular discharge opening at the top of the body, the said top presenting a flat face surrounding the discharge opening, a valve stem threadably associated with the body for giving axial movement to the stem, said stem having an enlarged cylindrical head with a beveled face upon the underside joining the same with the stem, said head protruding through the discharge opening and being of a diameter sufficiently smaller than that of the latter as to admit of the free flow of water past the head, a valve carried on the stem head and having a flat annular underside of larger outside diameter than the discharge opening and a beveled face continuing outwardly from the flat underside, the beveled faces of the stem head and valve both being fragmentary conical surfaces of an imaginary conical surface, and the length of the cylindrical stem head being such that the said imaginary conical surface is appreciably obstructed between the beveled faces of the stem head and valve by the edge of the discharge opening when the said flat underside of the valve is lowered into close proximity to the said flat face at the top of the body so that the sprinkler head will then deliver a flat misty spray, said sprinkler head delivering a coarse cone-patterned spray when the valve is raised above the top of the body an amount sufficient to leave the imaginary conical surface unobstructed.

2. The sprinkler head of claim 1 wherein the valve has a slotted crown for engagement of a screw driver, and with the crown being also faced down on diametrically opposite sides to give a grip for the fingers in adjusting the setting of the valve.

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