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P. GRELSON

2,534,016

LAWN SPRINKLER

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FIG 1

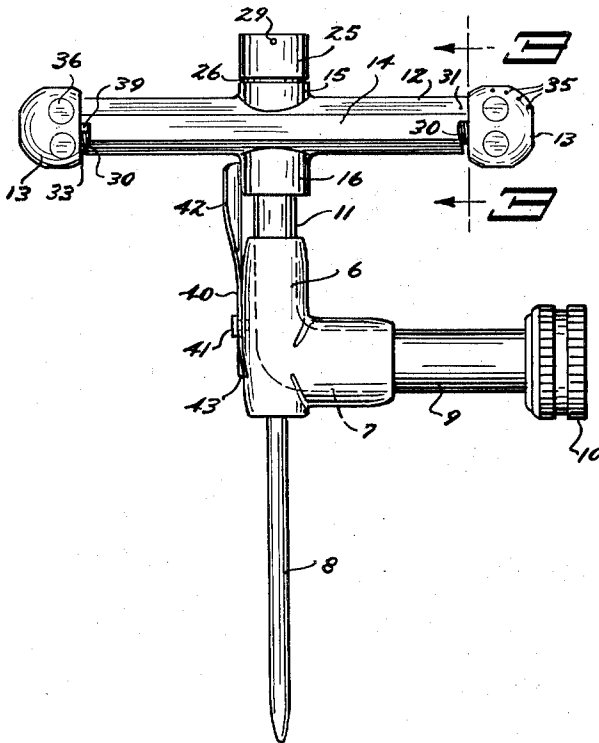


FIG 2

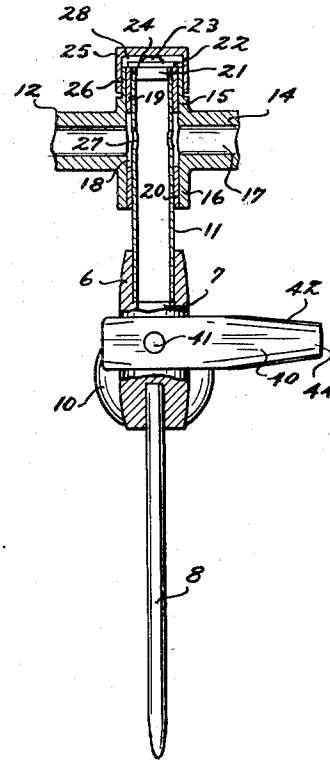


FIG 3

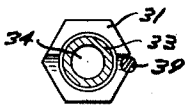
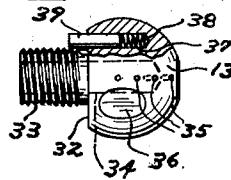


FIG 4



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LAWN SPRINKLER

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2 Claims. (Cl. 299—70)

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This invention relates to improvements in water sprinkling devices for lawns and the like and its primary object is to provide a sprinkler with a revolving sprinkler head to scatter the water in all directions and having an improved locking means to hold the head in a stationary position when such is desired.

Another object of my invention is to provide a sprinkler with improved adjustable water outlet nozzles for regulating the distance and direction of the water stream.

Still another object of my invention is to provide a lawn sprinkler which is simply constructed, durable, and relatively inexpensive to manufacture.

These and other more detailed and specific objects will be disclosed in the course of the following specification reference being had to the accompanying drawings, in which—

Fig. 1 is an elevation view of the sprinkler with the sprinkler head brake or lock in locking position.

Fig. 2 is a partial sectional view showing the internal structure of the sprinkler and with the lock in open position.

Fig. 3 is a section taken along line 3—3 of Fig. 1.

Fig. 4 is an enlarged fragmentary view showing one of the nozzle members partially in section.

Referring now more particularly and by reference characters to the drawing, the numeral 6 denotes a substantially L-shaped elbow casting which I shall refer to as the body of the sprinkler. The body has a round internal passage 7 extending therethrough, as shown, and anchors in the bottom portion thereof and elongated pointed spike 8 which serves as a stake for insertion in the ground. A hose connection pipe 9 is threaded or press fitted into the lower end of the passage 7 to extend horizontally from the body 6 and carries an internally threaded hose coupling 10 at its distal end. This coupling preferably retains a rubber washer (not shown) to insure a water tight connection with the conventional type fitting located on the free end of a garden hose.

The upper portion of the body 6 is rigidly connected with an upright pipe or tube 11 the lower end of which is threaded or press fitted into the upwardly opening end of passage 7. A sprinkler head, shown generally at 12, having terminal nozzle members 13 is rotatably mounted on the pipe 11 to carry the water therefrom and scatter it outwardly in various directions over the surrounding terrain.

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The sprinkler head 12 is constructed in the form of a cross casting having an elongated main arm portion 14 and medially located top and bottom portions 15 and 16. The main arm portion has a central passage 17 extending longitudinally therethrough and a round cross opening 18 extending vertically through the portions 15 and 16 to form collars thereof for receiving the pipe 11 as best shown in Fig. 2. Annular bearings 19 and 20, of brass or other suitable bearing material, are integrally affixed to the interior of the collar portions 15 and 16, respectively, to line the same. These bearings have an internal diameter only slightly greater than the diameter of the pipe 11 to allow the head 12 to revolve freely about the pipe while allowing only a minimum of water to escape between the bearings and the pipe. The upper end of the pipe 11 is plugged by means of a round insert 21 having an enlarged disc-shaped bearing portion 22 and a reduced top guard portion 23. The insert is held in place by clamping the end portion 24 of the tube 11 circumferentially inward against the insert. It will be noted by observance of Fig. 2 that the walls of the insert may be made slightly concave to insure a tight seal therearound. The entire plug or insert is of some suitable bearing material and the disc portion 22 has a diameter substantially equal to the diameter of the bearing 19 so that the under surface of the disc portion will bear fully on the annular top edge of said bearing when the sprinkler head 12 is held at its uppermost position on the pipe.

The sprinkler head is prevented from sliding down the pipe 11 by means of a cap 25. The upper distal end portion 26 of the collar 16 is ground to a smooth outer peripheral surface and the cap 25 pressed thereover to securely grip the collar. It may be observed from Fig. 2 that the top portion 23 of the insert supports the cap off the broad disc portion 22 to reduce frictional engagement between the two members. The sprinkler head is accordingly freely rotatable on the pipe 11, being held high on the pipe by cap 25 and retained against upward displacement therefrom by the disc portion 22.

In the pipe 11 I provide a pair of opposing side wall ports 27 to open into the passage 17 formed through the horizontal arm portion 14 of the sprinkler head. It can thus be seen that water under pressure from a connected garden hose will pass through the pipe 9, passage 7, pipe 11, and out through the ports 27 into the sprinkler head 12 to be dispensed through the water out-

let members or nozzles 13. It is found that some water may be forced upwardly between the pipe 11 and bearing 19 into the chamber 28 formed in the cap 25. I thus provide a small aperture 29 in the cap through which such water may escape to eliminate the possibility of any impeding pressure being built up in the chamber.

Referring now to the water outlet or nozzle members 13 and their means of connection with the sprinkler head 12, it will be noted first, that each end of the arm portion 14 is formed with substantially its under half cut away as at 30 to leave a short outwardly extending upper lip 31. The ends of the portion 14 are internally threaded.

Each nozzle member 13 (Fig. 4) is substantially three quarters spherical in shape having one flat side 32 from which extends an externally threaded shank portion 33 for screw threading engagement with an end of the sprinkler head. The member 13 has a deep radial recess 34 which opens out through the shank portion and a plurality of small water outlet openings or orifices 35 extending from the recess 34 through the spherical wall of the member. These orifices have coplanar axes on a radial plane of arm 14.

I provide spaced flat surfaces 36 around the member to facilitate manual turning thereof.

Adjacent the shank portion 33 each member 13 has a small relatively deep recess 37 drilled perpendicularly into the flat side 32. This recess retains a spring 38 and latch pin 39 which projects from the side 32 into the open space provided under the lip portion 31 when the nozzle is threaded into position (Fig. 1). The pin 39, riding in the space between the lateral edges of the lip, accordingly limits the adjustment of the nozzle orifices to an approximate 180° arc and insures retention of the nozzle on the sprinkler head. The nozzle members are threaded into the head by depressing the pin 39 against the spring, through use of the thumb nail or such, and threading the member inwardly until the face 32 contacts the end of the lip portion 31. The pin is then released to lock the nozzle on the head. Likewise, for removal of the nozzle, the pin is depressed to clear the lip 31 and the nozzle may be unscrewed. This pin or latch 39 also serves to hold the nozzle in any desired sprinkling position by exerting pressure against the adjacent edge 30.

It will be evident that when the nozzle orifices are directed upwardly the sprinkler head will remain motionless as the water travels upwardly and outwardly endwise from the head. However, when the nozzles are turned about their axes as in Fig. 1 so that the orifices are directed at an angle to the vertical plane through the axis of the arm portion 14, water jetting through the angled orifices will cause the sprinkler head to revolve around the pipe 10, in a well known manner.

To prevent the sprinkler head from whirling when it is desired to concentrate the sprinkling effect on a particular area, I provide a brake element to hold the head rigid with the body. This element is in the form of a thin resilient metal clip 40 which is slightly bowed and pivotally attached to the body member 6 as by a small bolt 41. The upper lateral edges of the strap are bent outwardly as at 42 to increase the resilient strength thereof and the lower portion is curved in cross section as at 43 to conform to the arcuate surface of the body 6. When it is desired to secure or lock the head against revolving move-

ment the brake element is moved about its pivot 41 to the position shown in Fig. 1 where the upper portion of the clip 40 is brought into frictional engagement with the collar 16. In moving the clip to this position it is straightened and being very springlike it exerts sufficient pressure against the collar to prohibit movement thereof around the pipe 11. It will be noted that the bottom end of the clip rests firmly against the body 6 and so operates to hold the brake in braking position.

When the sprinkler head is locked, the water outlet members can be adjusted to dispense the water in any desired direction. For instance, if both nozzles are turned to the point where the orifices face upwardly a long narrow area will be sprinkled. If the orifices are respectively faced in opposite directions from the sprinkling head, as in Fig. 1, a substantially hour glass shaped area will be watered. Or both nozzles may be turned to direct the water to the same side of the head in which case a substantially semicircular area will be covered. Of course, there are innumerable in between positions which may be used, wherein the orifices are set at varying degrees, to water the particularly shaped ground area concerned.

When the brake element is turned to the position shown in Fig. 2 the sprinkling head is released and is, of course, free to revolve again to sprinkle a substantially round area.

I have thus provided a sprinkling device which is easily adapted to regulate the concentration of water to ground areas of varying shapes and sizes. The adjustable water nozzles on the device are so constructed and mounted as to minimize the danger of their accidental displacement or loss. In general, the sprinkler provides a means of efficiently and inexpensively carrying out the aforementioned objectives.

It is understood that suitable modifications may be made in the structure as disclosed, provided such modifications come within the spirit and scope of the appended claims. Having now therefore fully illustrated and described my invention, what I claim to be new and desire to protect by Letters Patent is:

1. In a lawn sprinkler, a water conducting member having means for receiving a water supply, a nozzle member loosely screwthreaded on said water conducting member for selective turning adjustment to regulate the direction of water outlet therefrom, a lug on one of said members and a latch pin on the other member and co-operating with the lug to limit said turning adjustment, and said latch pin being yieldably supported to allow manual depression clear of the lug for unthreading removal of the nozzle member from the water conducting member.

2. In a sprinkling device a water conducting member, means for connecting said member to a water supply line, said member having a water outlet opening, a nozzle member loosely screwthreaded into said opening to allow selective rotary adjustment thereof to regulate the direction of water outlet from the water conducting member, a stop means on said last mentioned member and a projecting element associated with the nozzle member normally adapted to engage said stop means to limit rotary adjustment of the nozzle member to less than a complete revolution, and said association including a spring means allowing manual movement of said element against tension of said spring means to a position clear of the stop means for unthread-

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ing removal of the nozzle member from the water
conducting member.

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