

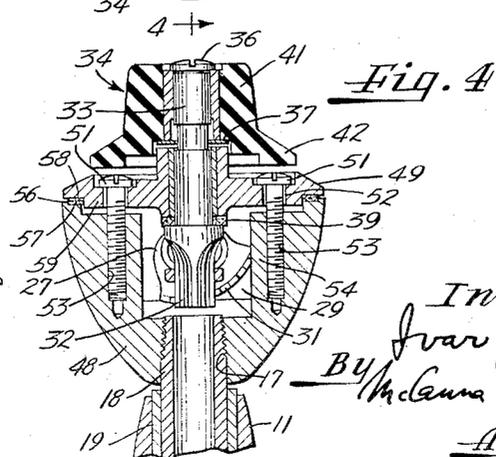
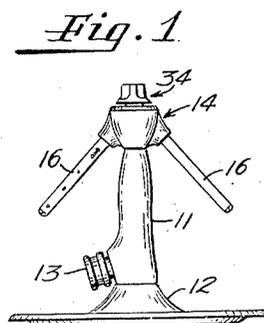
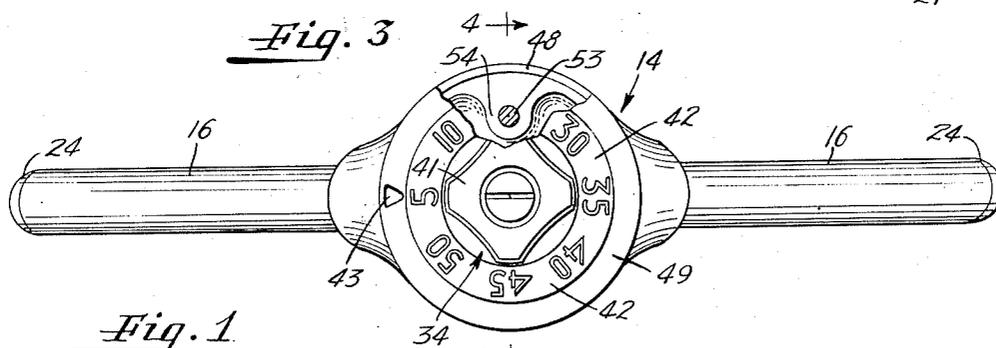
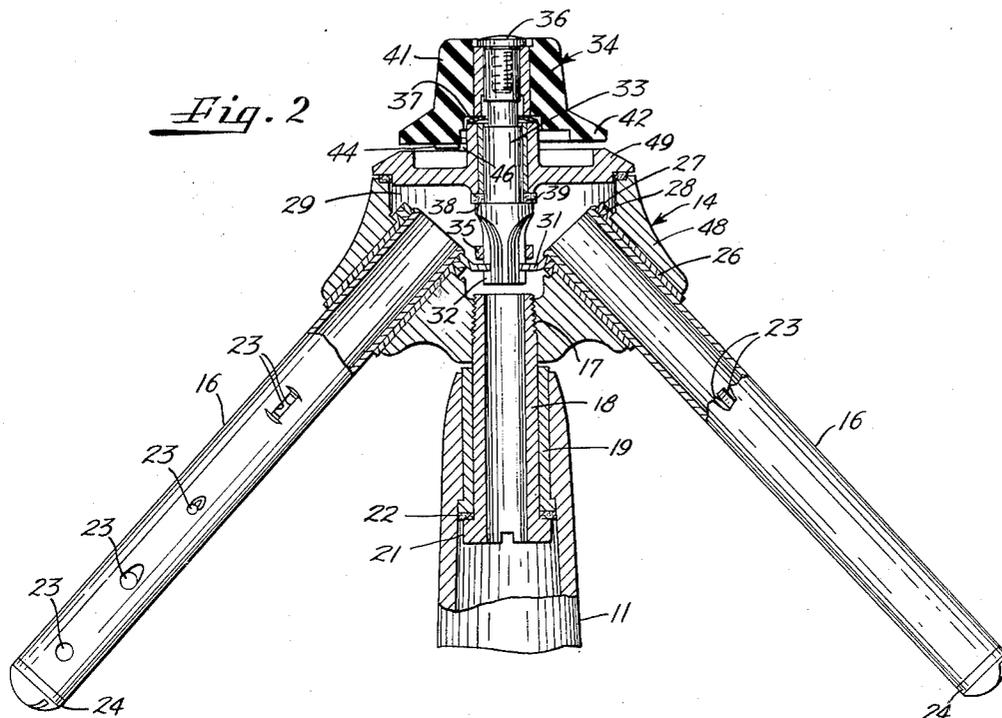
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I. JEPSON

2,591,073

SPRINKLER

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Inventor
Ivar Jepson
By *McLennan & Morabach*
Attys.

UNITED STATES PATENT OFFICE

2,591,073

SPRINKLER

Ivar Jepson, Oak Park, Ill., assignor to Sunbeam Corporation, Chicago, Ill., a corporation of Illinois

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1 Claim. (Cl. 299—69)

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This invention relates to sprinklers particularly adapted for watering lawns and the like and more particularly to improvements in sprinklers of this type disclosed in U. S. Patent 2,335,281.

An object of the invention is to provide a sprinkler of the above character having a novel head construction which facilitates assembly of the component parts and which eliminates the need for special tools in the assembly or disassembly of the head.

Another object of the invention is to provide a sprinkler of the above character having tubular nozzles and an improved means for adjusting the nozzles including a relatively large knob shaped to be conveniently grasped and an annular skirt portion carrying the indicia movable relative to a fixed index on the sprinkler and which when aligned with the fixed index indicates the area covered by the sprinkler.

Another object of the invention is to provide an improved sprinkler of the above character which is sturdy and rugged, which is simple in construction, and which is relatively inexpensive to manufacture.

Other objects and advantages of the invention will become apparent from the following detailed description taken in connection with the accompanying drawings, in which—

Figure 1 is a small scale side elevation view of a sprinkler embodying the present invention;

Fig. 2 is a fragmentary vertical sectional view through the sprinkler on a full size scale;

Fig. 3 is a plan view of the sprinkler structure shown in Fig. 2 with a cutaway portion to expose the internal parts of the sprinkler; and

Fig. 4 is a sectional view taken substantially along the line 4—4 of Fig. 3.

The drawings show my invention as embodied in a sprinkler especially designed for sprinkling lawns, but it should be understood that my invention is capable of application in other forms. In this embodiment of the invention the sprinkler comprises a support including a hollow upright 11 mounted on a base 12. A conventional hose connection 13 is attached to the lower end of the hollow upright 11 for the purpose of connecting the sprinkler to a pressure water supply. On the upper end of the support is mounted a head 14 carrying a plurality of nozzles 16. The head 14 is mounted for rotation about a vertical axis. To this end the head is formed with a downwardly extending threaded recess 17 shaped to receive the upper end of a hollow bearing stud 18. The latter is journaled in a suitable bearing

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bushing 19 fixed in the upper end of the support. The bearing stud 18 has an enlarged lower end 21 which is shaped to be seated against a combined packing and thrust washer 22 disposed between the lower end of the bushing 19 and the enlarged end 21 of the bearing stud 18.

Each nozzle 16 comprises an elongated tubular member having a plurality of discharge orifices 23 at spaced longitudinal positions thereon. The tubular members 16 are disposed on diametrically opposite sides of the head 14 and are inclined at an acute angle with respect to the axis of rotation of the head. At its outer end each nozzle is closed by a screw plug 24 which may be removed from the end of the tubular member to facilitate cleaning the latter. The upper end of each tubular member is received in a bearing insert 26 suitably retained as by a press fit in the head 14. A collar 27 is secured to the extreme upper end of each tubular member 16 and is shaped to abut against a thrust bearing washer 28 embracing the tubular member 16 and abutting against the end of the insert 26 disposed in a chamber 29 which provides communication between the hollow support 11 and the inner ends of the nozzles 16.

Suitable provision is made for adjusting the angular position of the orifices with respect to the longitudinal axis of the tubular member 16 so as to control the area, effectively covered by the sprinkler. For this purpose the collar 27 at the inner end of each nozzle is formed with a gear segment 31. These segments mesh with a vertically extending pinion 32 fixed to the lower end of a stud 33 which is mounted for rotative movement relative to the head 14. A collar 35 secured adjacent the lower end of the stud 33 positions the pinion 32 with respect to the gear segments 31. An indicator knob 34 suitably secured to the upper end of the stud 33 as by a splined connection and a screw 36 provides a manually operable means for imparting rotative movement to the stud 33 and pinion 32 and consequently imparting simultaneous rotative movement to the nozzles 16. Thus, by turning the knob 34 the nozzles 16 may be adjusted to any desired position within the range of operation of the sprinkler. A spring washer 37 interposed between the knob 34 and the head 14 normally holds the pinion shoulder 38 seated against a packing washer 39 thereby providing an effective water seal against leakage and keeping the parts free from unnecessary play.

One aspect of the invention is concerned with a novel construction of the indicator knob 34

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and the arrangement of the indicia thereon for indicating the area covered by the sprinkler for a particular setting of the indicia. In this instance the knob 34 is formed with a relatively large central portion 41 shaped to be readily grasped by an operator and has an annular skirt portion 42 extending outwardly from the lower end of the central portion 41. Spaced about the skirt are numbers or other suitable graduations. When one of these numbers is brought into alignment with an index mark 43, shown as an arrow-head formed on the top of the head 14, the nozzles 16 are adjusted to cover a diameter corresponding to the number opposite the index mark. The knob has limited rotative movement back and forth between the No. 5 setting and the No. 50 setting as determined by a lug 44 (see Fig. 2) on the underside of the knob 34 engaging a stop 45 projecting upwardly from the head 14. The above knob construction may be made from synthetic resinous materials. In such case two colored materials may be employed in a conventional manner so that the numbers are of one color and the central body portion 41 and the skirt portion 42 are of a different contrasting color. The above construction is advantageous in that the numbers may be made relatively large so that they are readily seen and they are not easily obliterated through use.

Another aspect of my invention is concerned with a novel construction of the head 14 that simplifies the manufacture thereof, that is relatively inexpensive to produce and that permits the ready assembly of the component parts thereof without the use of special tools. To this end the head 14 comprises a lower body portion 48 having the chamber 29 formed therein and a cover 49. The latter is secured to the body by spaced screws 51 extending through openings 52 in the cover 49 and received in threaded recesses 53 formed in vertical extending bosses 54. The latter are integral with the body 48 and are disposed on opposite sides of the chamber 29 between the tubular nozzles 16. To prevent leakage of liquid from the chamber 29 a gasket 56 is disposed between the cover 49 and the body 48. As shown the gasket is disposed between an annular shoulder 57 formed on the upper face of the body and a shoulder 58 on an opposed downwardly extending shoulder formed on the cover 49. The annular shoulder 57 also serves to locate the gasket 56, and the depending central portion 59 of the cover 49, defining the shoulder 58, is shaped to project into the extreme upper end of the body 48 to align the cover 49 on the body 48.

The above head construction is extremely simple to manufacture. Both the body 48 and the cover 49 may be readily formed as by die-casting or the like. This construction is also easy to assemble. For example, after the nozzles 16 are assembled in the body 48 the gasket 56 is positioned on the annular shoulder 57. Thereafter the washer 39 is disposed on the stud 33 to abut against the shoulder 38 and the upper end of the stud is projected through the opening for it in the cover 49. This subassembly is then positioned with respect to the body 48 so that the pinion 32 meshes the gear segments 31 and turning of the stud 33 simultaneously adjusts the nozzle 16. The cover 49 is positioned to align the

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openings 52 with the threaded recesses 53 and the screws 51 are then screwed into place by a screw driver or the like. Subsequent to the securing of the cover 49 on the body 48, the knob 34 is mounted on the upper end of the stud 33 and a screw 36 is threaded into place in the end of the stud 33 to secure the knob 34 in position. To disassemble the sprinkler the above mentioned steps are effected in a reverse order. From the foregoing it is seen that the assembly and disassembly of the head 14 of the sprinklers may be effected simply and without the use of special tools.

While I have shown one embodiment of my invention it will be understood that I do not wish to be limited thereto since many modifications may be made and I therefore contemplate by the claim to cover such modifications as fall within the true spirit and scope of my invention.

I claim:

In a sprinkler the combination of a sprinkler head comprising a hollow body having a bottom wall portion and a side wall portion providing a cup shaped open top chamber, the bottom wall portion having a central water inlet and provided with means for supporting said head to rotate about an axis coaxial with said water inlet, discharge nozzles supported on said side wall portion at opposite sides of said axis and having nozzle adjustment means within said chamber, bosses integral with said side wall portion extending into said chamber at points intermediate said nozzles, each boss having a threaded opening parallel with said axis, a gasket seated on the open end of said body at the outer side of said bosses, a cover seated on said gasket having screw openings in registration with said boss openings, screws passing through said cover openings and threaded into said boss openings for clamping the cover against said gasket and body, a stud mounted for rotation in the cover about an axis coaxial with the first mentioned axis and having one end projecting into the chamber for coaction with said nozzle adjustment means and its opposite end projecting beyond the cover, an indicator knob having a central hand grasp portion and an annular skirt portion extending outwardly from the base of the hand grasp portion, said screws being provided with heads bearing against the upper surface of said cover and at least one of said knob and cover being provided with a recessed portion for receiving said screw heads, and means for mounting said indicator knob on said opposite end of said stud with said skirt portion forming a shield overlying said screw heads, said skirt portion providing a relatively large top surface and having indicia circumferentially arranged thereon indicating different nozzle settings.

IVAR JEPSON.

REFERENCES CITED

The following references are of record in the file of this patent:

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