March 28, 1950 H. B. PARKER 2,501,912

SPRINKLER

Filed July 3, 1945

Fig. 1.

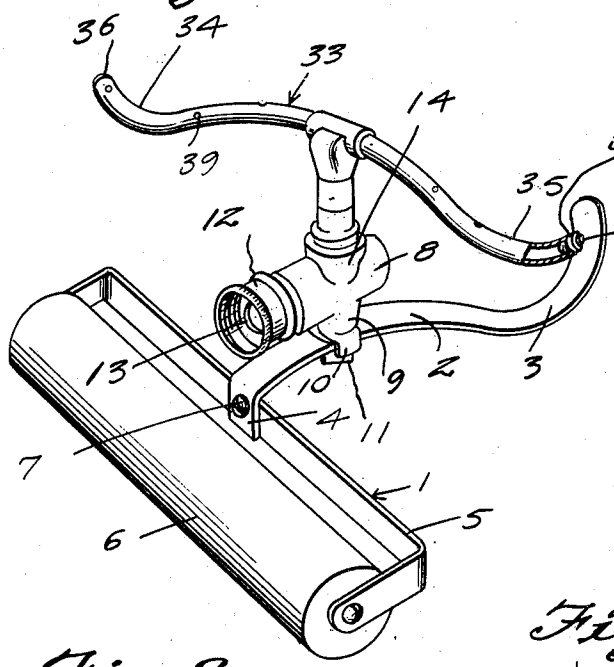


Fig. 5.

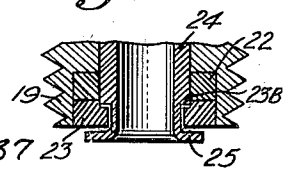


Fig. 4.

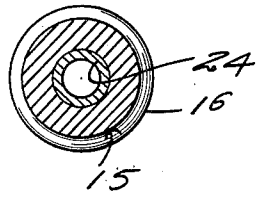


Fig. 2.

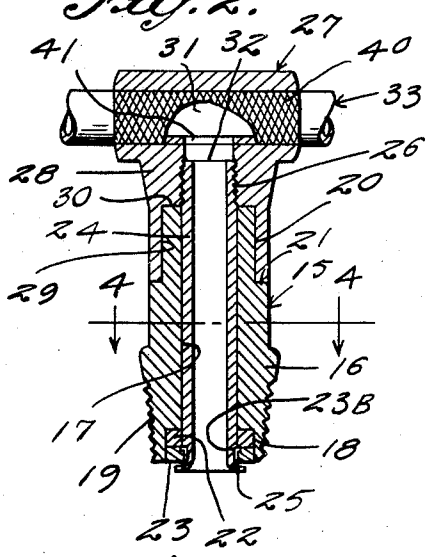
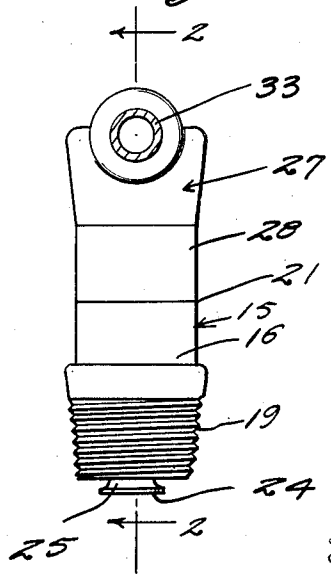


Fig. 3.



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SPRINKLER

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2 Claims. (Cl. 299—69)

1

This invention relates to irrigating devices and more particularly to an improved sprinkler for sprinkling lawns, gardens and the like.

One object of the invention is to provide a lawn sprinkler so constructed that it may be readily moved from place to place without danger of injury to freshly planted runners of grass on the lawn.

Another object of the invention is to provide a sprinkler having a low center of gravity and which, therefore, may not easily be overturned.

Another object of the invention is to provide a sprinkler wherein the sprinkler arm employed is curved and is formed with orifices, certain of which are so arranged that streams of water projecting therefrom will intersect, with the result that a fan-shaped spray of water from the center of the sprinkler to the furthest edge of the wetted area will be produced, for assuring uniform irrigation of the entire area within the range of the sprinkler.

Another object of the invention is to provide a sprinkler of this type employing a bearing which is sand-proofed for preventing entry of sand or other foreign matter.

Still another object of the invention is to provide a sprinkler wherein the T-head and sprinkler arm employed are mounted as a unit for assuring a rigid structure, said arm having a knurled portion engageable with the T-head for locking said T-head in place.

Another object of the invention is to provide a device of this character having plugs formed with jets for projecting streams of water for propelling the sprinkler head on the bearing, said plugs being removable from the ends of the arm for permitting easy cleaning of said arm.

Other objects of the invention not particularly mentioned hereinbefore will become apparent as the description proceeds.

In the accompanying drawings forming a part of this application:

Figure 1 is a perspective view of my improved sprinkler,

Figure 2 is an enlarged vertical sectional view on the line 2—2 of Figure 3,

Figure 3 is a side view, partly in section, of the bearing and T-head, and

Figure 4 is a horizontal sectional view on the line 4—4 of Figure 2.

Figure 5 is a fragmentary sectional view on an enlarged scale similar to Figure 2.

In the drawings, similar numerals of reference will be employed for designating like parts throughout the views.

Referring now more particularly to the drawings, and to Figure 1 in detail, the numeral 1 indicates in general the carriage of my improved sprinkler. The carriage 1 includes a supporting

2

element 2 formed preferably from a strip of metal of suitable gauge. The element 2 includes a curved central portion which terminates in an upwardly curved runner 3. At its inner end, the element 2 is bent at an angle to define at attaching portion 4, and said element is connected to the center of a yoke 5 which mounts a roller 6. The roller is, of course, freely rotatable in the yoke and will cooperate with the runner 3 for permitting the carriage to be moved over a lawn or other surface with ease. It is desired to call particular attention to the fact that the roller 6 is relatively wide with respect to the height of the runner 3, with the result that the carriage will have a low center of gravity so that it may not easily be overturned.

Mounted on the central portion of the element 2, near the yoke 5, is the body of my improved sprinkler, said body being indicated in general by the numeral 8. The body 8 includes an attaching shank 9 which is formed with lips 10, said lips overhanging the side edges of the central portion of the supporting element 2 and preventing rotation of the body. A nut 11, screwed on a bolt projecting through the element, effectively retains the body on said element. The body 8 is provided with a coupling 12, of conventional design, and said coupling is, of course provided with the usual washer 13. The coupling, as will be seen, is presented toward the roller end of the carriage and is adapted for receiving the externally threaded end portion of a hose.

The body 8 also includes an upwardly presented internally threaded nipple 14 which is disposed in axial alignment with the shank 9, and screwed into said nipple is a sleeve which is indicated generally by the numeral 15. The sleeve 15 which forms a bearing for a rotatable member is best shown in Figures 2 and 3 of the drawings and is formed with an axial opening 17 terminating at its lower end in a recess 18. The sleeve 15 also includes an externally threaded lower end portion 19 which is screwed into the nipple 14 and, near its upper end, said sleeve has a reduced portion 20 defining a shoulder 21. Mounted in the recess 18 is a sealing washer 22.

Rotatably mounted in the axial opening 17 of the sleeve 16 is a hollow spindle 24 which is flared at its lower end, as shown at 25, and includes an externally threaded upper end portion 26, said upper end portion extending past the upper limits of said sleeve. It will be noted that the flared portion 25 serves the three-fold function of retaining metal bearing washer 23 against a shoulder 23B formed in hollow spindle 24, of holding washer 22 in place in the recess 18, and of retaining the hollow spindle against upwardly displacement. Screwed on the externally

threaded upper end portion 26 of the hollow spindle 24 is a T-head 27, said T-head having a shank 28 formed with a recess 29 defining a shoulder 30. It will be seen that the recess 29 rotatably receives the reduced portion 20 of the stationary portion 16 and that the lower end of the shank 28 abuts the shoulder 21. The upper end of the portion 20 abuts the shoulder 30. It will now be understood that the T-head 27 is secured to spindle 24 and rotatably connected within the sleeve 16 and that the hollow spindle 24 effectively prevents separation of the T-head from said portion 16. The T-head 27 is formed with a horizontal opening 31 and, communicating between the open upper end of the spindle 24 and said opening 31, is an opening 32.

Rigidly mounted in the T-head 27 and extending through the opening 31 therein is a sprinkler arm 33. The sprinkler arm includes bowed end portions 34 and 35 which are closed at their outer ends by plugs 36 and 37, each of which is formed with a jet 38. The ends of the arm are turned downwardly approximately 45° from the horizontal and then are curved upwardly approximately 60°, also from the horizontal. The jets are so arranged that water projecting therefrom will impart rotative movement to the arm and T-head. Formed in the arm 33 at each side of the T-head, are discharge openings 39. As will be observed, three discharge openings are formed in the arm at each side of said T-head and said openings are staggered on the circumference of the arm. In this way a spray of water can flow uniformly from the center of the sprinkler to the furthest edge of the irrigated area. Water flowing from the jets 38 will, of course, provide additional irrigation to that produced by water flowing from the openings 39.

In manufacture, the T-head is preferably cast about the arm 33 with the result that said T-head and arm will be formed as a unit. To assure that said T-head will be rigidly fixed on the arm 33, and that leakage will be prevented, said arm is provided with a serrated portion 40 for receiving minute portions of molten metal during casting of said T-head. The arm 33 is provided with an opening 41, within the T-head, which opening communicates with the opening 32.

In use, a hose is, of course, first screwed into the nipple 12. The sprinkler may be moved over the surface to be watered simply by pulling the hose in the desired direction. As pointed out hereinbefore, the center of gravity of the carriage is so low that danger of overturning the device when shifting it about will be eliminated. The roller 6 and runner 3 will, of course, cooperate to permit the device to travel easily over the surface so that damage to grass will not occur.

When the water is turned on, it will enter the body 8 and will flow upwardly through the hollow spindle 14 into the T-head and through the arm 33 at each side of said T-head. From the arm 33, streams of water will project through the openings 39 for effectively irrigating the area surrounding the sprinkler. Water will, of course, also flow through the jets 38 in the plugs 36 and 37 for imparting rotative movement to the arm and T-head, about the bearing 15. As hereinbefore pointed out, however, the openings 39 are staggered for assuring maximum distribution of water. It will be apparent from the foregoing description that the arrangement of the openings and the curvature of the ends of the arm will cooperate for assuring uniform distribution of water.

Attention is particularly directed to the fact that the washer 22 in the recess 18 of the bearing 15 serves not only as an end thrust bearing for the hollow spindle 14 but, also, as means for taking up side thrust. This construction assures smooth operation and long wear.

It is believed that the construction and operation of my improved sprinkler will now be thoroughly understood.

Having thus described the invention, what is claimed is:

1. In a sprinkler, a sleeve having a reduced portion defining a shoulder, said sleeve having an axial opening, a T-head having a recess defining a shoulder, the lower end of said T-head abutting said first mentioned shoulder and the upper end of said reduced portion abutting said second mentioned shoulder in the recess, said sleeve having a recess in its lower end, a sealing washer in said second mentioned recess, a hollow spindle carried by the T-head and rotatably connecting said T-head with the sleeve, said hollow spindle extending through the opening in the sleeve and formed with a shoulder adjacent the lower end thereof, a retaining washer about said spindle bearing against said shoulder, and the lower end of said spindle being flared to hold said retaining washer against said shoulder, said retaining washer also forming a metal bearing for said spindle.

2. In a rotary sprinkler, a tubular bearing member having a reduced upper end defining a shoulder, a T-head formed with a recess defining a shoulder, the lower end of said T-head abutting said first mentioned shoulder and the upper end of said reduced portion abutting said second mentioned shoulder in the recess, said bearing member formed with a recess in its lower end, a sealing washer in said latter recess, a hollow spindle carried by said T-head rotatably mounted in said bearing, said spindle formed with a reduced lower end defining a shoulder, and a retaining member carried by said bearing engaging said shoulder and means on the said spindle engaging said bearing for restraining said spindle against sliding in said bearing.

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