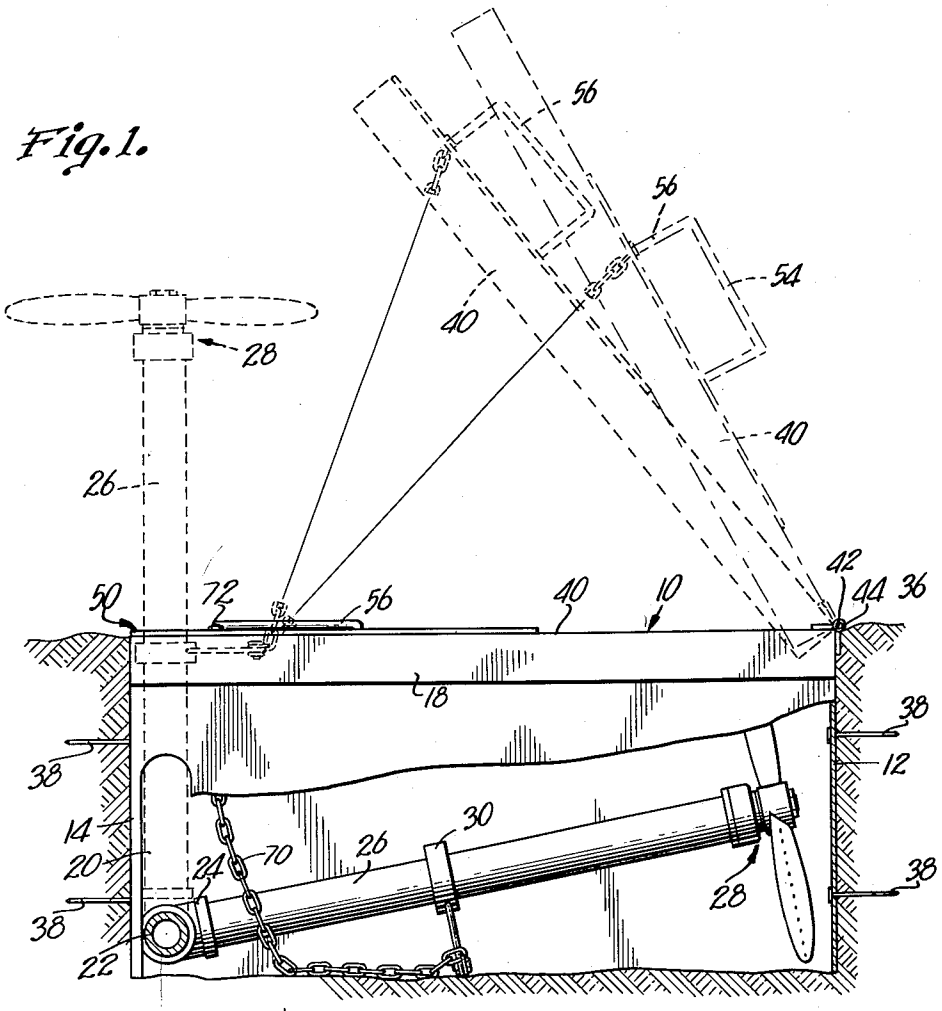
May 9, 1961 A. C. RAMSEY 2,983,451

LAWN SPRINKLING ASSEMBLY

Filed May 23, 1960

Fig. 1.



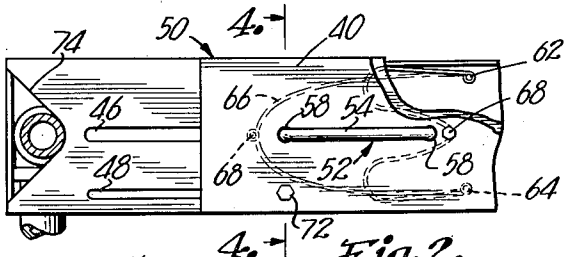


Fig. 2.

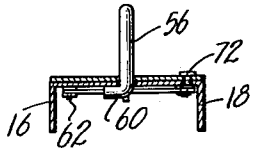


Fig. 4.

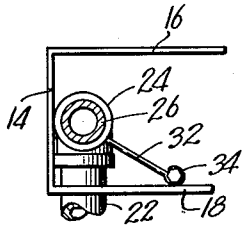


Fig. 3.

INVENTOR.
Arthur C. Ramsey

BY

Hovey, Schmidt, Johnson & Hovey
ATTORNEYS.

United States Patent Office 2,983,451 Patented May 9, 1961

2,983,451

LAWN SPRINKLING ASSEMBLY

Arthur C. Ramsey, Green Gables, Fla.
(4423 Toledo St., Coral Gables, Fla.)

Filed May 23, 1960, Ser. No. 31,188

6 Claims. (Cl. 239—203)

The present invention relates generally to an underground sprinkling system, and more particularly to a sprinkling system in which the sprinkling heads can be raised and lowered from receptacles provided therefor and placed with the tops thereof flush with the ground.

There are generally two types of underground sprinkling systems, one of which has a so-called mist-type head which sprays a small area, and one of which is supplied with a rotating nozzle-type of sprinkler head which covers a relatively large area. For the purpose of covering the greatest area with the smallest number of sprinkling heads, it will be obvious that it would be preferable to have a system in which a small number of rotating nozzle heads are supplied. In the past, it has been extremely difficult to provide a system of the type mentioned because of the fact that nozzles of the rotating type must stand well above the ground in order to accomplish the purpose of covering a large area.

The present invention proposes to provide a sprinkling system of the underground type in which one or more receptacles are supplied wherein sprinkling heads may be stored when not in use, and wherein, in addition, the heads may be raised well above the surface of the ground during the periods when it is desired to use the system.

It is, therefore, an object of the present invention to provide an underground sprinkling system in which a receptacle is provided wherein the spinkler heads may be stored when not in use and in which the receptacle is provided with a pivotable cover connected to the sprinkler so that the sprinkler may be raised from the receptacle or lowered therewithin by simple opening movement of the cover.

It is a further object of the present invention to provide a sprinkling system as hereinbefore described in which the cover includes a sliding cover plate and in which means are provided interconnecting the cover plate and the sprinkler whereby the movement of the cover plate alters the pivot point of the interconnecting means so that pivoting movement in opening the cover plate while the plate is in one position will cause the sprinkling head to raise, and opening movement of the cover, when the cover plate is in a second position and while the sprinkler is in the raised position, will cause the sprinkler to be impelled toward the stored position.

It is another object of the present invention to provide biasing means between the cover or top closure and the cover plate, whereby the cover plate is continuously biased toward one position.

It is still a further object of the present invention to provide a cover plate and top closure assembly as above described wherein the top closure is provided with one or more slots to accommodate the sliding motion of the cover plate.

It is still a further object of the present invention to provide an assembly as above described in which the cover plate is provided with a handle which can be raised and lowered with respect to the cover plate and permitting an operator to manually slide the cover plate against

the bias of the biasing means when it is desired to alter the pivot point as previously described.

It is a further object of the present invention to provide a handle for the cover plate having a flange preventing the accidental withdrawal of the handle from the cover plate when manually raising the cover.

Still another object of the present invention is to provide a sprinkling device substantially as described wherein means are provided for supporting the sprinkler firmly in the vertical position against the impact of a foreign object.

Other objects and advantages will be apparent as further description of the invention proceeds.

In the drawing:

Figure 1 is a side elevational view partially in section and with portions broken away to reveal details of construction.

Fig. 2 is a top plan view partially in section to show details of construction of a receptacle embodying the present invention.

Fig. 3 is a fragmentary, top plan view of the receptacle with the cover removed; and

Fig. 4 is a transverse, cross-sectional view taken along line 4—4 of Fig. 2.

Referring now to the drawing, and particularly to Fig. 1, there is shown a receptacle indicated generally by the numeral **10**. In the preferred form, the receptacle **10** is generally rectangular and provided with a pair of end walls **12** and **14** and a pair of side walls **16** and **18**. A substantially U-shaped opening **20** is shown in side wall **18** proximate to its juncture with end wall **14** so that a water supply conduit **22** may be received within receptacle **10**.

An elbow **24** is provided in threaded engagement with conduit **22** at one end, and in further threaded engagement with pipe segment **26** at its other end. The other end of pipe segment **26** is in threaded engagement with a rotating nozzle-type sprinkler indicated generally by the number **28**. It will be noticed with particular reference to Fig. 1 that in the solid line position, the sprinkler **28** and pipe segment **26** are entirely within the confines of the receptacle **10**. A collar **30** is mounted on pipe segment **26** intermediate sprinkler **28** and elbow **24**, and a flange **32** having an eye **34** at one end is fixed at its other end to collar **30**. Collar **30** is positioned on pipe segment **26** so that in the raised or dotted line position in Fig. 1, the collar **30** is positioned below the top margin of the receptacle **10**.

It will be noted that the receptacle **10** is buried in an aperture provided therefor in the earth, and has no bottom. It should be further noticed that the receptacle **10** is buried with its upper margins flush with the ground indicated generally by the number **36**. In order to fasten the receptacle within the aperture provided, a series of pins or nails **38** are provided which are driven through openings provided therefor in the side and end walls of the receptacle and engage with the ground **36** to prevent upward movement of the receptacle.

A top closure **40** is provided for receptacle **10** which is pivoted to end wall **12** of the receptacle in the customary manner by a pin **42** and hinge **44**. Top closure member **40** is provided with a pair of grooves **46** and **48** for reasons which will hereinafter appear as the description proceeds.

A cover plate **50** having substantially the same width as top closure member **40**, but being of a lesser length, is slidably mounted on top closure member **40** and is held thereon in a manner which will subsequently be described.

A generally U-shaped handle **52** is provided having a handle section **54** and a pair of side legs **56**. The handle extends through a pair of apertures **58** provided

therefor in cover plate 50. These apertures register with slot 46 in top closure plate 40 through which the legs 56 also extend. Legs 56 are provided at their extremities proximal to the open end of the U, with a pair of flanges 60 bent in the same direction at right angles thereto and integral therewith. The flanges 60 prevent the handle 52 from pulling out of engagement with the cover plate 50 and top closure 40 when grasped at the handle portion 54 and pulled upwardly. At the same time, it can be seen that, due to the length of legs 56, the handle can be moved from a position in which portion 54 is flush with the top of plate 50 to a position in which there is ample room for the hand of a user to grasp the handle portion 54.

A pair of spring mounting bolts 62 and 64 are provided upon which the open ends of a spring 66 can be mounted. Spring 66 is in the shape of a half ellipse in its extended position and its closed end bears against a tension applying bolt 68.

Means are provided interconnecting eye 34 with cover plate 50 which is shown in the drawing as a chain 70 bolted to the eye at one end and bolted to the cover plate 50 by means of hexagonal bolt 72 at the other end. To permit movement of the bolt 72 relative to the top closure 40, slot 48 is provided in the top closure 40.

It is obvious from the structure described, that the legs 56 of handle 52 and the bolts 72 and 68, will position the cover plate 50 properly with respect to top closure 40. Washers (not shown) will be provided for bolts 72 and 68 so that the plate 50 may be held closely to top closure 40 without preventing sliding movement of plate 50 relative to closure 40.

In operation, it will be assumed that the sprinkling head 28 and pipe segment 26 are initially found in the solid line position shown in Fig. 1 within the receptacle provided therefor. When it is desired to raise the sprinkling head 28 to its operational position indicated in dotted line in Fig. 1, it is a simple matter for the user to grasp and raise the handle 54. The cover plate 50 is in its furthest position toward the end of receptacle 10 indicated by end 14, due to the bias of spring 66 against bolt 68. In this position, an upward manual force exerted against handle 52 by an operator grasping handle section 54, will extend chain 70 causing pipe segment 26 and sprinkler head 28 mounted thereon to raise to a fully upright position. In order to permit such movement, elbow 24 is threaded to conduit 22 with at least a quarter turn of leeway to permit the elbow 24 to pivot on the conduit 22.

It is desirable, when the sprinkler is in operation, to support it in the raised position, and for this reason the operator, after raising the sprinkler head 28 to its upright position, will release some of the tension on chain 70 by slightly lowering closure plate 40 and will then impart force against the bias of spring 66 to move the cover plate 50 slightly to the rear.

A groove 74 having a generally V-shaped margin is provided in the top closure plate 40 so that the plate may be moved to its closed position accommodating pipe segment 26 therein. The rearward force on the cover plate 50 is then released, permitting the cover plate to slide forward covering slots 46 and 48 and spring 66 will bias the front edge of plate 50 into frictional engagement with segment 26 providing support for pipe segment 26 in the upright position. Support of the kind mentioned is necessary for pipe 26 when in the upright position so that accidental impact of a foreign object with the pipe will not cause the pipe to be broken off at its lower extremity.

Should it be desired now to lower the pipe 26 and sprinkler 28 back into the receptacle 10, the operator simply grasps the handle 52 by handle portion 54 and applies rearward force against spring 66, causing it to bend into a position such that the closed end forms the midpoint of two generally half elliptical-shaped portions When the slide reaches its furthest rearward point, it will be stopped by one end of slot 46 from further motion in that direction, but the pivot point of the chain 70 engaged with bolt 72, will have been sufficiently altered so that opening motion of the cover 50 and top closure 40 will impel segment 26 and sprinkler 28 toward its stored position within the receptacle 10. Such impelling force does not carry the pipe 26 and sprinkler 28 entirely into receptacle 10, but alters the center of gravity of the structure sufficiently so that the force of gravity will cause the sprinkler 28 and pipe segment 26 to lower the remainder of the distance into the receptacle 10.

When the sprinkler 28 and pipe segment 26 are thus lowered, the top closure 40 and cover plate 50, may be closed and the rearward force on the closure plate released. The biasing action of spring 66 will then cause the cover plate 50 to slide forwardly along top closure 40 as guided by slots 46 and 48 until such movement is stopped by the forward margin of groove 46. In this position, the slots 46 and 48, and the notch 74, are all covered by cover plate 50 such that no leakage will take place in the receptacle 10 when the receptacle is closed and the sprinkler is out of use.

Having thus described the invention what is claimed as new and desired to be secured by letters patent is:

1. In an underground sprinkler system, the combination with a water supply conduit of a sprinkler head pivoted on the conduit, and a bottomless, generally rectangular receptacle having a conduit receiving opening therein, said receptacle buried with the upper margins thereof flush with the surface of the ground, said receptacle having a top closure pivoted thereon, said top closure having a sprinkler receiving opening therein and being provided with a sliding cover plate, said sprinkler head being pivoted to said water supply conduit adjacent one end of said receptacle and having an operating position outside of said receptacle and a stored position within said receptacle, and means interconnecting said top closure and said sprinkler head whereby an initial opening pivoting movement of said top closure raises said sprinkler head to the operating position and a subsequent opening pivoting movement of said closure impels said sprinkler head toward the stored position said top closure may close said receptacle and said cover plate is slidingly engageable with the sprinkler head when the latter is in the raised position.

2. The device of claim 1, wherein said cover plate is provided with a manually raisable and lowerable handle and a tension applying means and said top closure is provided with a slot for slidably receiving said handle and said means, biasing means mounted on said top closure and bearing against said tension applying means, said handle being raisable to manually grasp when raising or lowering said top closure and said biasing means sliding said cover plate and handle along said slot to engage said cover plate with the sprinkler head and to cover said slot opening against fluid leakage.

3. The device of claim 2, wherein said biasing means comprise a spring of generally one-half an ellipse in shape, the closed end of said spring bearing against said tension applying means, said spring normally biasing said cover plate toward a slot covering position.

4. The device of claim 3, wherein the means interconnecting said sprinkler with said top closure are connected to said cover plate, said top closure being provided with a slot for sliding the interconnecting means relative to said top closure whereby, when said sprinkler is in the raised position and it is desired to store it, said cover plate is manually slidingly moved against the bias of said spring, removing said cover plate from engagement with said sprinkler and opening of said top closure impelling said sprinkler toward its stored position.

5. The device of claim 4, wherein said sprinkler is mounted on an elongated connecting pipe pivoted to said water supply conduit, said interconnecting means comprising a chain fastened at one end to said cover plate and at the other end to a collar mounted on said connecting pipe whereby said sprinkler is raised and lowered by the pivoting action of said top closure, said elongated

connecting pipe positioning said sprinkler in the raised position well above the level of the ground.

6. The device of claim 5, wherein said cover plate is generally rectangular in shape thereby to cover the sprinkler receiving opening in the top closure when said sprinkler is in the lower position, said cover plate slot being a detent preventing further sliding action of said cover plate.

References Cited in the file of this patent

UNITED STATES PATENTS

1,176,758	Jirouch	Mar. 28, 1916
1,337,744	Ballerstedt	Apr. 20, 1920
2,513,047	Pfeiffer	June 27, 1950
2,757,045	Nullet	July 31, 1956