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C. THORREZ
NYLON SPRINKLER HEAD
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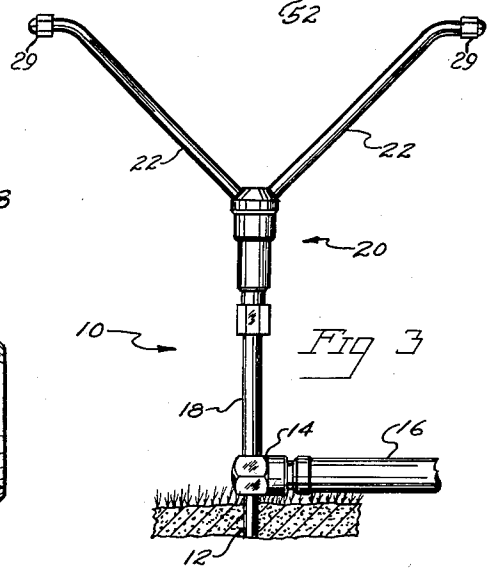
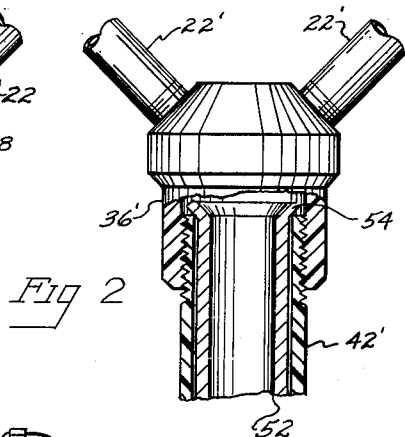
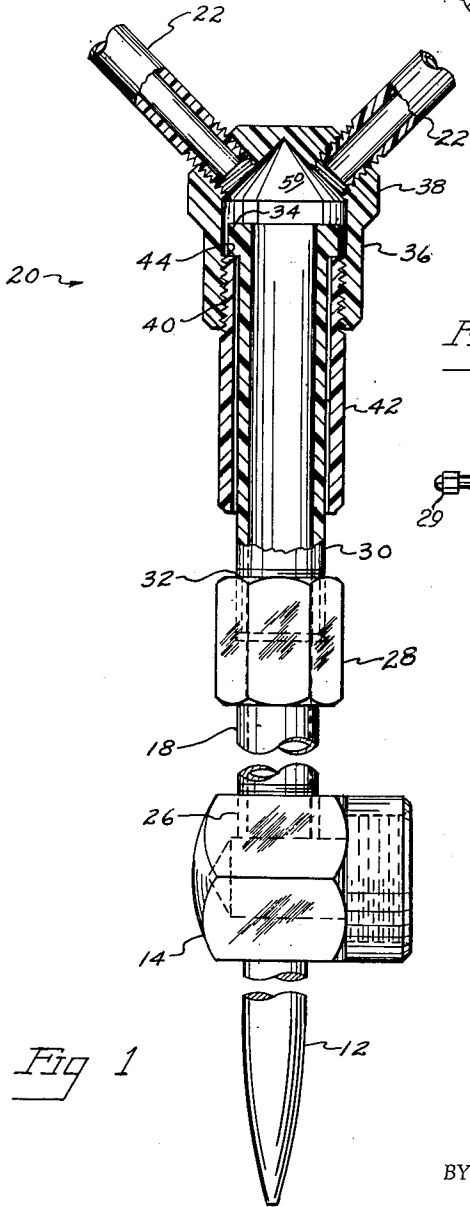
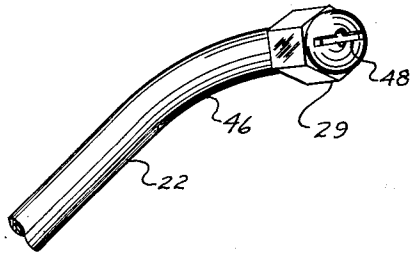
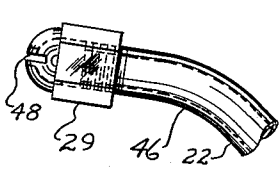


Fig 1

Fig 2

Fig 3

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NYLON SPRINKLER HEAD

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1 Claim. (Cl. 239—259)

The invention relates to a sprinkler head, particularly to a reaction driven rotatable head constructed of nylon and other non-corroding material.

Lawn sprinklers are subject to adverse weather conditions inasmuch as the sprinklers are often left out of doors during use and are intermittently subjected to water which promotes accumulation of rust, and often after one or two seasons usage the rust, dirt and wear of the rotating parts renders the sprinkler inoperative.

It is, thus, an object of the invention to provide a non-corroding reaction type sprinkler head which will not corrode and may easily be disassembled for cleaning.

Another object of the invention is to design a rotatable sprinkler head of nylon wherein the components may be economically manufactured and water pressure is utilized to maintain sealing between the rotating and stationary elements.

These and other objects of the invention will become apparent when the invention is reviewed with respect to the following description and accompanying drawings wherein:

Fig. 1 is a detail elevational view, partly in cross section, of the invention,

Fig. 2 is a cross section elevational view of a modification of the invention, and

Fig. 3 is an elevational view of a complete sprinkler, utilizing the head of the invention, placed in a lawn.

The basic components of a sprinkler utilizing the head of the invention are best shown in Fig. 3 wherein the sprinkler 10 may be positioned upright in a lawn by stake 12 which is pushed into the soil. A coupling 14 provides the means whereby a conventional garden hose 16 may be attached to supply the sprinkler with water. The base pipe 18 extends from coupling 14 and mounts the head 20 from which arms 22 protrude, the water is ejected from the arms 22 through the nozzles 29.

The details of the sprinkler are best shown in Fig. 1 wherein it is apparent that the coupling 14 is internally bored and threaded to receive the hose connection. The base pipe 18 is threaded into a bore 26 formed in coupling 14 which communicates with the interior of coupling 14. Pipe 18 may be of any desired length to suit the size area to be watered, e.g. the longer the pipe 18, the larger the area covered by the sprinkler, other factors being constant. Pipe 18 is provided with an internally threaded adapter 28 at the upper end forming means for attaching the sprinkler head 20.

The head 20 consists of a tubular pivot member 30 which is threaded at 32 for connection with the adapter 28 and at the upper end is formed with a flange 34. The underside of flange 34 may be machined to produce a smooth surface for reasons that will later be apparent.

The rotatable portions of head 20 consist of a cylindrical housing 36 which is closed at the upper end 38 and internally threaded at the lower end 40. As will be noted in Fig. 1 the upper end 38 is of bulbous configuration and is provided with thick walls into which the arms 22 may be threaded and adequately supported. A tubu-

lar sleeve 42 threaded at the upper end, cooperates with threads 40 to hold the housing 36 on the pivot member 30. Sleeve 42 encircles member 30, the internal diameter of sleeve 30 being greater than the outside diameter of member 30 enough to provide a running fit. The upper end 44 of sleeve 30 is faced off square and engages the underside of flange 34 during operation.

The shape and construction of pivot member 30, housing 36 and sleeve 42 permits these elements to be easily manufactured from bar nylon or other types of plastic which are machinable in lathes and automatic screw machines. Nylon or plastic construction of a sprinkler head of this type will not react with water, dirt, or other agents forming corrosion, rust or other deleterious matter which would interfere with the operation of the sprinkler.

The tubular arms 22 are also constructed of nylon or plastic and are bent at 46 near the outer end. The nozzles 29 are threaded for attachment to the arms and are formed with the slot 48 which disperses the water stream. The arms 22 are screwed into housing such that the water stream is directed slightly upward and the bent portions 46 cause the reaction of the water leaving the nozzles to have tangential force vectors rotating the housing 36 and sleeve 42.

During operation the water pressure within chamber 50 will tend to lift the housing 36 off the pivot member 30, this reaction will bring the edge 44 of sleeve 42 into engagement with the underside of flange 34 as in Fig. 1. Thus, a seal is achieved between the stationary and rotating elements of the sprinkler head 20. The water within chamber 50 will act as the lubricant and very little wear will occur at the flange or edge 44.

A modification of a sprinkler head employing the concepts of the invention is shown in Fig. 2 wherein it will be noted that the distinction over the disclosure of Fig. 1 lies in the pivot member 52. Pivot 52 is constructed of a metallic tube, preferably of brass, bronze or aluminum, which will not react with water to form a heavy corrosion such as rust. The stop of pivot 52 is flanged at 54 whereby the sleeve 42' may contact the underside of the flange forming a seal. As in Fig. 1 the sleeve 42', housing 36' and arm 22' are constructed of nylon or plastic and are assembled and function as described above.

It will thus be apparent that the disclosed sprinkler construction permits a rotatable reaction type sprinkler head to be economically produced from nylon or plastic bar stock resulting in a long wearing non-corrosive device. By utilizing the water pressure to maintain the fluid seal between the stationary and rotating members of the head the sealing action is self-maintained and automatically compensates for wear.

I claim:

A rotatable reaction type sprinkler comprising in combination, a stake adapted to be inserted into the ground, a hose fitting having an internal chamber affixed to said stake, rigid conduit means affixed to said fitting in communication with said chamber, a tubular pivot member affixed at one end to said conduit in communicating therewith, an annular radially extending flange integrally formed on and defining the other end of said pivot member and provided with a sealing surface, a tubular uniformly cylindrical sleeve axially movable and rotatably supported on said pivot member below said flange, one end of said sleeve being provided with a sealing surface adapted to engage the sealing surface of said flange during operation of the sprinkler, a bulbous housing affixed to said sleeve adjacent the sealing surface thereof defining a chamber enclosing said flange, the bore of said flange end of said pivot member communicating directly with said chamber such that the flow of water entering said

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chamber is parallel to the axial movement of said sleeve, tubular conduit arms supported on said housing in communication with said chamber, and nozzle means affixed to the ends of said arms, said pivot member, sleeve, housing, arms and nozzle means being formed of a thermoplastic polyamide resin.

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