R. McMULLAN.

IRRIGATOR SPRINKLER.

APPLICATION FILED SEPT. 18, 1913.

1,180,167. Patented Apr. 18, 1916.

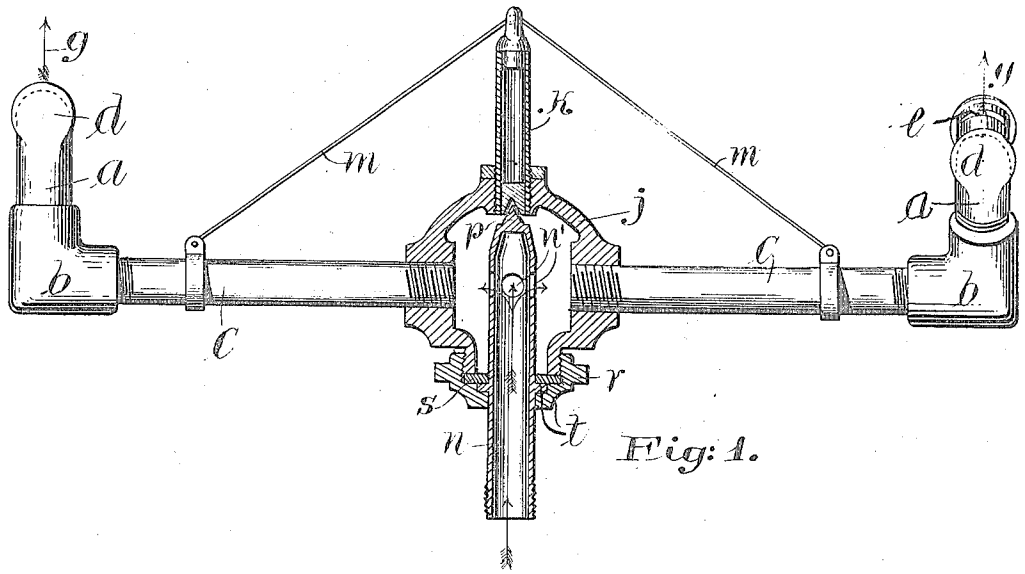


Fig: 1.

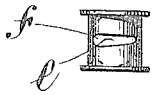


Fig: 2.

Witnesses:

M. E. McDade.

C. E. Keeler

Inventor

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by James L. Norris

Attorney.

# UNITED STATES PATENT OFFICE.

ROBERT McMULLAN, OF FREMANTLE, WESTERN AUSTRALIA, AUSTRALIA.

## IRRIGATOR-SPRINKLER.

1,180,167. Specification of Letters Patent. Patented Apr. 18, 1916.

Application filed September 18, 1913. Serial No. 790,523.

*To all whom it may concern:*

Be it known that I, ROBERT McMULLAN, a subject of the King of Great Britain, and residing at 99 South Terrace, Fremantle, Western Australia, Commonwealth of Australia, have invented certain new and useful Improvements in Irrigator-Sprinklers, of which the following is a specification.

This invention relates to those sprinklers which rotate owing to the force of the escaping water and an important result is attained by this construction in that the volume of water issuing from the water exit at any point is such that there is neither overwatering or underwatering of any portion of the area comprised within the peripheral working line, or in other words, there is uniform distribution of water within the area sprinkled by the rotating sprays.

The invention essentially resides also in the construction and assemblage of the sprinkler with its pivot and water seal.

The construction and operation of the invention will now be described with the aid of the attached drawings in which:—

Figure 1 is an elevation, partly in section, of a sprinkler and nipple made according to this invention and Fig. 2 is a top plan of the nipple proper.

Referring to said drawings the nipple *a* is secured by threads in the elbow *b* on the end of the revolving arm *c*. The exit end *d* of the nipple is of a semicircular or a semispherical form and across the top of such rounded end *d* is formed a wedge or V shaped slot or opening as *e* (see Fig. 2). This graduated slot *e* of the form shown is used with its large end *f* toward the outer edge of the orbit or circle of the rotating irrigator *c* in order to allow the greatest volume of water to be distributed over the greater peripheral area served by the irrigator in its rotation.

The slot *e* in vertical section follows the semicircular or curved shape of the end *d* of the otherwise closed nipple *a* while its other or horizontal shape is that of a V or graduated slot as above described. The nipple when in its working position is perpendicular to the revolving and horizontal arm *c*. These nipples *a* are removably secured by threads in the elbow *b* and thereby connected to the arms *c* so as to cause the rotation of said arms by reason of the force of the exit water as shown by the arrows *g*. These arms are secured by threads in the central case or hub *j* having the mast head *k* threaded thereinto as shown while by the rods *m* said arms are stayed or guyed. The central fixed pipe *n* which acts as the water feed pipe has the openings $n^1$ through which the water escapes into the hub *j* and therethrough to the arms *c* as indicated by the arrows. This fixed pipe is formed with the closed top having the pin *p* upon which the whole appliance rides or rotates so giving ease of movement and a minimum of friction. By means of the mast head *k* the tension is effected and when overpressure of water occurs the sprinkler may be "braked" to a reduced speed. The hub at its bottom is provided with a packing comprising a screw threaded gland *r* and a washer *s* confined between an annular shoulder *t* on the pipe *n* and the lower end of the hub. Further by the mast head adjustment *k* the washer *s* can be made sufficiently tight to prevent the escape of water and any upward displacement of the sprinkler when rotating.

What I claim as my invention and desire to secure by Letters Patent is:—

1. An irrigating sprinkler comprising a hollow hub formed with a water distributing chamber, discharge nozzles radially and horizontally projecting from the discharge chamber of said hub, a supply pipe extending into said hub and having the latter rotatably mounted thereon, a bearing pin formed on the extremity of said supply pipe, a mast threaded into the upper end of said hub and located in axial alinement with said pipe, the mast being formed with a corresponding bearing recess in its lower end adapted to receive said bearing pin of the supply pipe and being adjustable in the direction of the axis of the hub, whereby the speed of rotation of said hub and nozzles may be varied, brace rods extending from the upper extremity of said mast and secured to said nozzles adjacent their free ends, and a water-tight gland between the lower end of the hub and said pipe, said gland preventing a slidable movement of the hub with respect to the pipe.

2. An irrigating sprinkler comprising a hollow hub forming a water distributing chamber, discharge nozzles projecting from said hub, a supply pipe having its upper end projecting into said hub, a supporting flange

projecting from said supply pipe adjacent its upper end, a packing gland adapted to surround said pipe below and engage with said supporting flange and to be threaded on the lower end of the hub, said gland being formed with a mortise adapted to receive said supporting flange, a washer surrounding said pipe and interposed between said packing gland and the lower end of the hub and overlying said supporting flange and an adjustable bearing mounted between the hub and the upper end of said pipe.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ROBERT McMULLAN.

Witnesses:
RICHARD SPARROW,
FREDERICK CHARLES WALTHAM.