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SPRINKLER FOR LAWNS, GOLF GREENS, GARDENS, AND THE LIKE.

APPLICATION FILED FEB. 8, 1913.

1,089,179. Patented Mar. 3, 1914.

Fig.2.

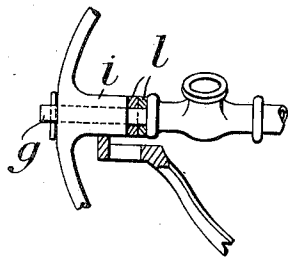


Fig.1.

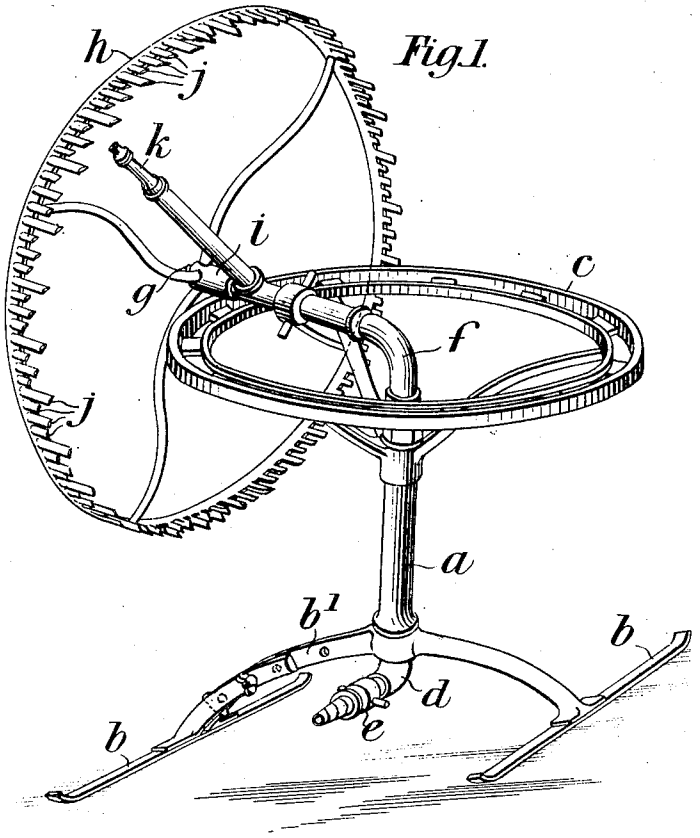


Fig.5.

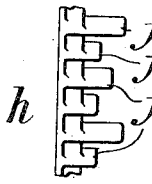


Fig.3.



Fig.4.

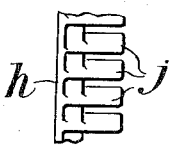


Fig.7.

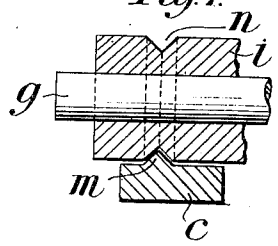


Fig.6.

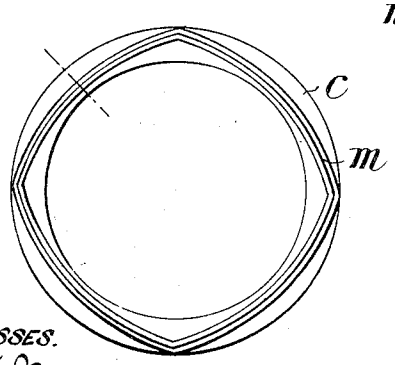
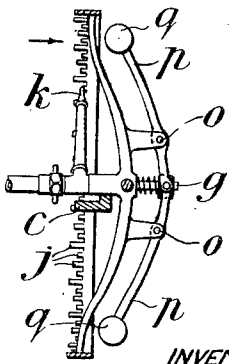


Fig.8.



WITNESSES.

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SPRINKLER FOR LAWNS, GOLF-GREENS, GARDENS, AND THE LIKE.

1,089,179. Specification of Letters Patent. Patented Mar. 3, 1914.

Application filed February 8, 1913. Serial No. 747,075.

To all whom it may concern:

Be it known that I, PAUL ZEYSSOLFF, a subject of the German Emperor, residing at Munster, Alsace, in the German Empire, have invented new and useful Improvements in Sprinklers for Lawns, Golf-Greens, Gardens, and the like, of which the following is a specification.

This invention relates to an improved sprinkler for use in watering lawns, golf greens, cricket pitches, gardens and the like, and to that class of sprinklers wherein a nozzle is adapted to be revolved around a vertical axis and is arranged in combination with a wheel or like device, in such a manner that a jet of water issuing from the nozzle will impinge upon the wheel or the like to rotate it, the rotation of the wheel serving to cause the rotation of the jet.

In the sprinkler constructed according to this invention, the wheel upon which the jet of water operates is mounted upon a radial arm so that its plane of rotation is perpendicular to a radius of a circular table or platform upon which the hub of the wheel runs.

In the accompanying drawing:—Figure 1 is a perspective view of a sprinkler constructed according to my invention. Fig. 2 is a sectional view illustrating the construction of a detail. Fig. 3 is a face view of a portion of the sprinkler wheel drawn to a larger scale than Fig. 1. Fig. 4 is an edge view illustrating the arrangement of the blades of the wheel, and Fig. 5 is a view similar to Fig. 4 illustrating a variation in the construction of the wheel. Fig. 6 is a plan view, and Fig. 7 a sectional view, drawn to a larger scale, illustrating a modification. Fig. 8 is a sectional view illustrating a further modification.

a indicates a hollow vertical standard mounted upon feet *b*, *b* and carrying at the upper end a circular table or platform *c*; the hollow vertical standard at its lower part is provided with an elbow *d* and a union *e*, or is otherwise constructed for the attachment of a hose, and at the upper part the vertical standard is provided with a hollow horizontal arm *f* which is jointed to the standard in such a manner that the said arm can rotate around a vertical axis, the extremity of this horizontal arm has fixed to it a pivot or axle *g*.

h is the sprinkler-wheel which is mounted upon the axle-pin *g* and the hub *i* of which is designed to roll around the platform *c*. This wheel *h* has upon its lateral face near to the periphery a series of lateral blades *j*, *j* against which a jet of water issuing from a nozzle *k* fixed to the horizontal arm *f* is designed to impinge, the said lateral blades having inclined surfaces, as clearly shown in Fig. 3, so that as a jet issuing from the nozzle *k* impinges against them, it will cause the rotation of the wheel on the axis *g*, and, as the hub *i* of the said wheel rests on the platform *c*, also the revolution of the said wheel around the vertical axis of the standard *a*.

It will be understood that the jet of water as it strikes the wheel will be more or less broken up or sprayed and that owing to the rotation of the wheel *h*, and the consequent revolution of the latter around the vertical axis the spray will be delivered over a relatively larger area. The blades *j*, *j* may all be of the same length, as shown in Fig. 4; in practice, however, I prefer to make the blades of varying length, as shown in Fig. 1, and also in Fig. 5, both of which figures illustrate the use of blades of three lengths, j^1 indicating the longest blades, j^2 the shortest blades, and j^3 the blades of intermediate length. These blades are so arranged with relation to one another that blades of the same length are equi-distant apart. When I use this arrangement of blades of varying length it is necessary also to provide for adjusting the position of the wheel with relation to the water jet so that the latter may impinge against one or more of the sets of blades as desired, for instance, the wheel may be so adjusted that the water will impinge either against the extremities of the longest blades or against the extremities of the intermediate blades (in which case it will also strike the central portion of the longest blades) or against the shortest blades; in which case it will also act against all three sets of blades. With this latter adjustment a relatively high speed of rotation will be obtained, and the water will be very much broken up. If, however, the water impinges say against the longest blades only, then the wheel will rotate more slowly and the water, being less broken up, will travel much farther.

The longitudinal adjustment of the position of the wheel *h* with relation to the jet may be effected by means of loose washers *l* upon the axle *g*, which washers may be

placed inside the wheel, as shown in Fig. 2, in which case the water jet will impinge against the longest blades j^1 only, or, on the outside of the wheel in which case the water will impinge against all the blades, and if one washer is put on at one end of the boss and one at the other end then the water will impinge against the extremities of the intermediate blades j^3.

In some cases the ring or platform c upon which the boss i runs, during the revolution of the wheel h, around the vertical axis, may be formed with a cam rib m, as shown in Fig. 6, and the boss i formed with a groove n which runs upon this cam rib, as shown in Fig. 7, so that as the said wheel revolves around its vertical axis, and also rotates on its own axis, it will alternately move toward and away from the vertical axis. This arrangement may be advantageously used in connection with say a square lawn, as, if the position of the apparatus is properly adjusted, it will allow of water being distributed in the corners of the lawn.

In another arrangement illustrated in Fig. 8 the wheel has pivoted to it at o, o a series of arms p, p which at their outer ends are provided with weights q, q and at their inner ends attached to a ring, or otherwise rotatably connected to the axle g. With this arrangement the centrifugal action of the weights q will tend to move the wheel in the direction of the arrow, Fig. 8 during a rapid rotation, while as the speed of rotation decreases a spring r will tend to move the wheel in the reverse direction. The normal position of the parts will be such that the jet of water will impinge against all the blades, an increase in the speed of rotation serving to move the wheel so as to cause the jet to act upon the intermediate blades or the longest blades only and vice versa.

The base of the frame is advantageously formed with bars or runners b, as shown and such bars or runners may be provided with wheels or rollers for facilitating the movement from place to place. Also, in practice, I advantageously provide means for allowing of adjusting the apparatus in an upright position on inclined ground. As shown in Fig. 1, the arm b^1 carrying one of the runners b is made in two parts adapted to be adjusted with relation to one another so as to permit of lengthening or shortening the said arm according to requirements.

Claims—

1. In a sprinkler for lawns and the like, the combination with a circular table or platform, an arm pivoted at the center of said table or platform, a wheel mounted on the said arm so that its plane of rotation is perpendicular to a radius of the said table or platform, a series of lateral blades upon said wheel, and a nozzle for directing a jet of water against the inside of the said blades for causing the rotation of the said wheel.

2. In a sprinkler for lawns and the like, the combination of a circular table or platform, an arm jointed in the center of the said table and adapted to rotate in a horizontal plane, a rotating wheel mounted on the extremity of the said arm and having its hub adapted to rotate on the table, a series of blades carried by the said wheel and a nozzle carried by the horizontal arm and adapted to direct a jet of water on to the said blades to cause the rotation of the wheel on its axis and its revolution around the vertical axis, substantially as described.

3. In a sprinkler for lawns and the like, a wheel having a series of lateral blades upon it, a horizontally rotating water carrying arm carrying the said wheel, a nozzle provided on said arm and designed to direct a jet of water against the said blades, and means for moving the wheel longitudinally upon the horizontal arm for the purpose of varying the position of the jet of water issuing from the nozzle with relation to the said blades, substantially as described.

4. In a sprinkler for lawns and the like, the combination with a horizontal table or platform, a horizontal arm rotating with relation to the said table or platform and a wheel mounted upon said arm and running upon the platform, of means comprising a cam rib and groove for automatically moving the wheel longitudinally upon the arm, substantially as described.

5. In a sprinkler for lawns and the like, the combination with a circular track, an arm pivoted at the center of said track and a wheel adapted to rotate in a plane perpendicular to a radius of the said track, of a series of lateral blades upon the said wheel, and a nozzle for directing a jet of water against the said blades.

6. In a sprinkler for lawns and the like, the combination with a circular track, an arm pivoted at the center of said track and a wheel adapted to rotate in a plane perpendicular to a radius of the said track, of a series of lateral blades of varying lengths upon the said wheel and a nozzle for directing a jet of water against said blades.

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Witnesses:
HEINRICH BOMMENSATLY,
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