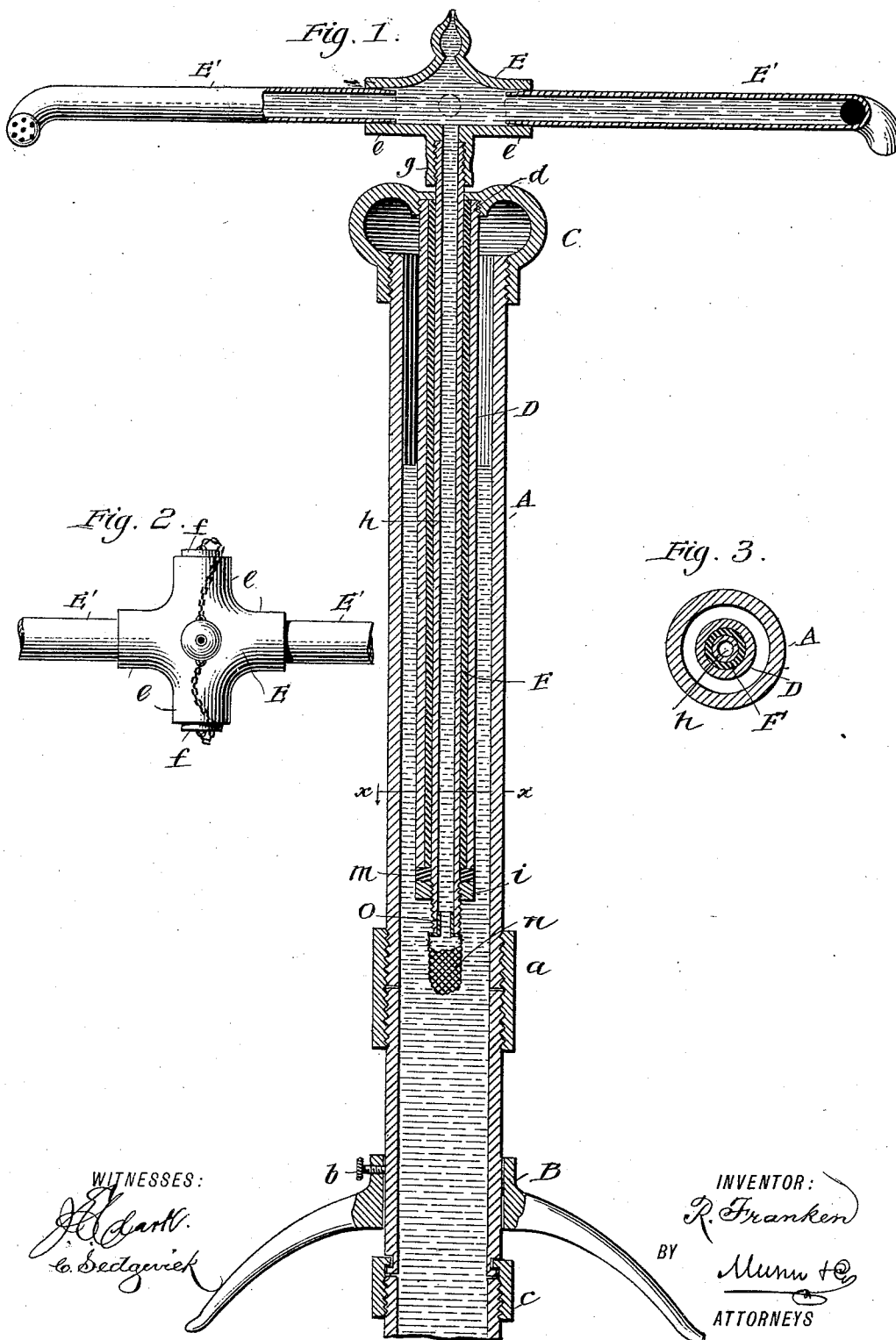


(No Model.)

R. FRANKEN.
LAWN SPRINKLER.

No. 443,394.

Patented Dec. 23, 1890.



WITNESSES:

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ROBERT FRANKEN, OF POMONA, CALIFORNIA.

LAWN-SPRINKLER.

SPECIFICATION forming part of Letters Patent No. 443,394, dated December 23, 1890.

Application filed July 3, 1890. Serial No. 357,668. (No model.)

To all whom it may concern:

Be it known that I, ROBERT FRANKEN, of Pomona, in the county of Los Angeles and State of California, have invented a new and useful Improvement in Lawn-Sprinklers, of which the following is a full, clear, and exact description.

This invention relates to an improvement in lawn-sprinklers of a class in which the discharge of water from the device automatically revolves the water-discharging pipes, so as to distribute a fine spray of water around the stationary or movable sprinklers, the object being to provide a sprinkler of the class named which will be effective in operation, convenient to adjust for use, and that will be water-tight at the head-joint, so as to avoid an objectionable leakage of water.

To these ends my invention consists in certain features of construction and combinations of parts, as hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation in section, axially taken, one spray-pipe being shown partly in side elevation. Fig. 2 is a plan view of the revolving head of the sprinkler, two spray-pipes being shown broken, the apertures for intermediate spray-pipes being plugged up; and Fig. 3 is a plan in section of the cylindrical portion of the device, taken on the line $x x$ in Fig. 1.

The outer cylindrical stand-pipe A is preferably made of metal tubing having a suitable internal diameter and proper length for its purpose, said stand-pipe being composed of two pieces joined by a threaded socket a , that engages mating threads on the adjacent ends of the pipe-sections, the use of which will appear. An adjustable spider-legged base-piece B is adapted to slide upon the lower portion of the stand-pipe A, and when secured at a desired point by the set-bolt b said base-piece will retain the device in an upright position.

Upon the lower end of the stand-pipe A a swivel-nut c is secured loosely, which nut will serve to connect a hose to the lower portion

of the sprinkler for the supplying of water to it.

An air-chamber C, of a larger diameter than the stand-pipe A, is removably attached to the upper end of said pipe by a threaded engagement therewith, the air-chamber having a central circular orifice made in it, and concentric with this orifice a counterbore, formed in the thickened wall of the air-chamber for the insertion of a pendent guide-tube D, the upper end portion of which tube is threaded exteriorly to engage the threaded side wall of the counterbore, as shown at d in Fig. 1. The length of the pendent guide-tube D is proportion to that of the upper section of the stand-pipe A, so that the lower end of the guide-sleeve will hang near to the socket a .

The revolving portion of the water-sprinkling device consists of a head-piece E, which is furnished with four evenly-spaced lateral branches e , that are screw-tapped for the threaded connection therewith, of four radial spray-pipes E', if such a number of water-discharge pipes are to be used. For ordinary purposes two spray-pipes E' will be sufficient. These are secured in the "four-way" head-piece E at opposite points, the other water-outlets being closed by the screw-plugs f .

There is an integral collar or socket g formed upon the lower side of the head-piece E at a central point, which socket is internally threaded for the threaded connection of a water-supply stem h . The latter is preferably made of seamless brass tubing of such a relative diameter to the guide-tube D as to allow an annular space to intervene between the concentric walls of the stem and guide-tube when the stem is introduced through the perforation of the air-chamber B. The length of the tubular stem h should exceed the length of the guide-tube D, a thread being formed upon the lower projecting portion of the stem for the reception of a nut i , that should fit tightly upon the tubular stem, so as to avoid displacement.

Between the tubular stem h and guide-tube D a packing joint-sleeve F is introduced, which sleeve is preferably made of gum hose or similar material and extends from the upper end to the lower end of the guide-tube D. The thickness of the wall of the joint-sleeve

is so proportioned to the annular space it occupies that it will form a nearly-tight water-joint between the stem *h* and guide-tube, holding them concentric while the tubular stem is permitted to revolve.

A joint-washer *m*, preferably made of hard leather, is located between the nut *i* and lower end of the guide-tube *D*, said nut being adjusted upon the stem *h*, so as to allow a slight space to intervene between the socket *g* and adjacent surface of the air-chamber *C*.

There is a screen *n* in basket form provided for the lower end of the tubular stem *h*, the screen portion having a metallic nipple extension *o*, that will fit closely within the open lower end of the stem when it is inserted.

The outer extremities of the spray-pipes *E'* are bent oppositely and at such an angle to the bodies of the spray-pipes that spray-nozzles on these bent ends will project a series of fine streams of water outwardly and downwardly, so as to saturate the ground surface within the radius of projection afforded the streams, which will be determined by the force of water-pressure in the stand-pipe *A*.

It is evident that the device herein described will afford means for the even distribution of water upon a lawn, and, should it be desired, the base-piece *B* may be removed and the swivel-nut *c* connected to a fixed water-supply, such as an ordinary pave-wash device. (Not shown.) Any desired number of these sources of water-supply may be placed in the ground and the stand-pipe *A* be successively attached to them for the irrigation of a lawn without the use of hose.

The provision of a socket *a* in the stand-pipe *A*, located near to the depending lower end of the revoluble tubular stem *h* and its screen *n*, is made to permit the proper adjustment of parts and affords access to the screen if it should require cleansing. As water enters the stand-pipe *A* from below, the air-chamber *B* affords an air-cushion on the surface of the water, which will obviate spasmodic action and cause the spraying discharge to be regular, the frictional resistance of the sleeve-joint *F* and washer *m* serving to steady the rotary movement of the spray-pipes *E'* and render the same uniform, while leakage

at the top of the air-chamber is entirely prevented by the extensive surface of contact of the joint-sleeve and upward bearing of the washer *m* against the joint-sleeve and guide-tube end when the device is in service.

Having fully described my invention, I claim as new and desire to secure by Letters Patent—

1. A lawn-sprinkler having a stand-pipe, an air-chamber thereon, a pendent guide-tube, a revoluble head provided with radial spray-pipes and a pendent hollow stem, a joint-sleeve extended throughout the length of the guide-tube, means to hold the hollow stem within the guide-tube and intervening joint-sleeve, and means to connect the stand-pipe with a water-supply, substantially as set forth.

2. The combination, with a stand-pipe, an air-chamber thereon which is centrally perforated, and a central guide-tube secured to the air-chamber concentric to the central perforation of said air-chamber, of a radially-branched head-piece, jet-pipes in the head-piece, a tubular stem secured to the lower side of the head-piece, an elongated joint-sleeve of slightly-pliable material placed between the guide-tube and interior pendent hollow stem, a washer on the lower end of the hollow stem, a set-nut on the stem, and a device to connect the stand-pipe with a water-supply, substantially as set forth.

3. The combination, with a stand-pipe, an air-chamber thereon that is centrally perforated, a pendent guide-tube, and an elastic joint-sleeve within the guide-tube extending the entire length of said guide-tube, of a radially-branched head-piece, spray-pipes oppositely secured in the head-piece, a pendent hollow stem affixed to the head-piece below and at right angles to the radial spray-pipes, a joint-washer on the lower end portion of the hollow stem, a removable screen which engages the open lower end of the hollow stem, a removable base on the stand-pipe, and a means to secure the stand-pipe to a source of water-supply, substantially as set forth.

ROBERT FRANKEN.

Witnesses:

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