J. A. BROOKS.

LAWN SPRINKLING MEANS.

APPLICATION FILED JAN. 14, 1916.

1,192,743. Patented July 25, 1916.

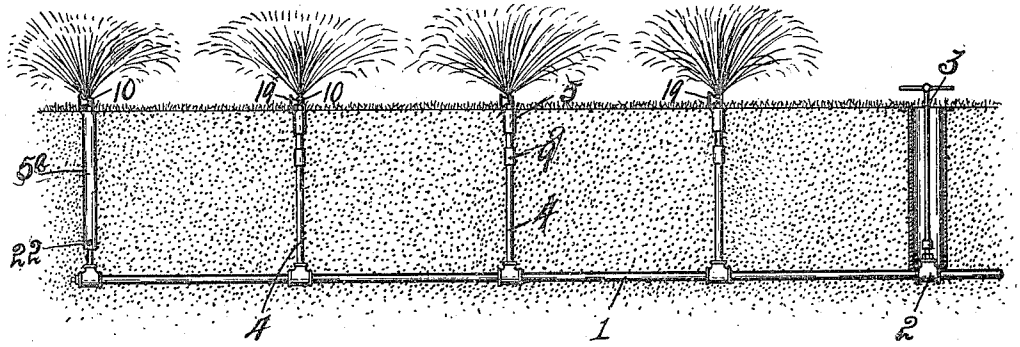


Fig. 1.

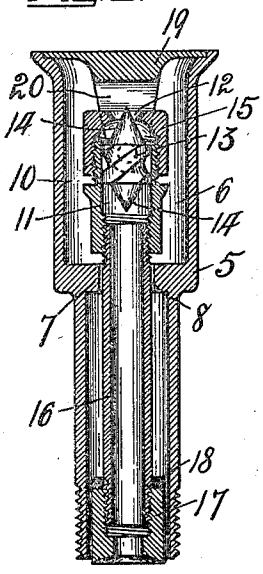


Fig. 2.

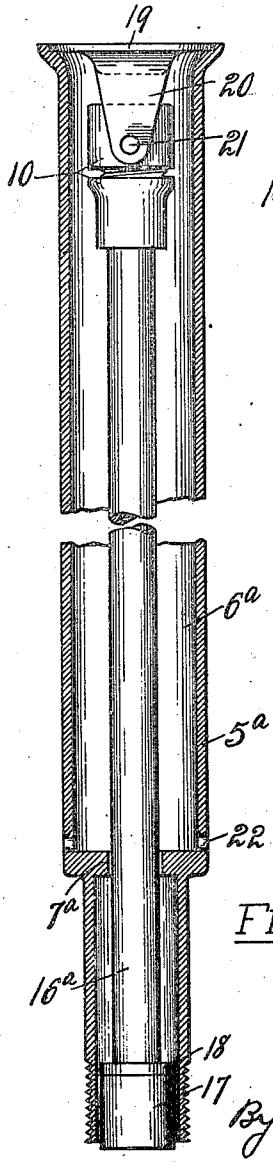


Fig. 4.

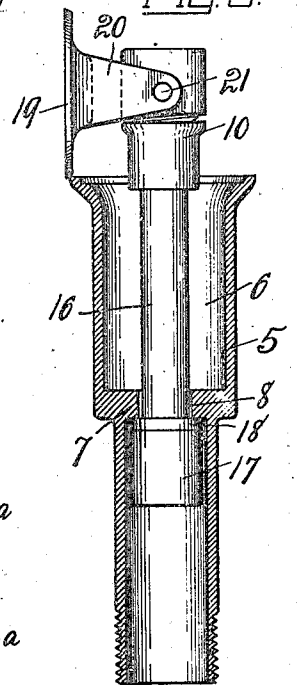


Fig. 3.

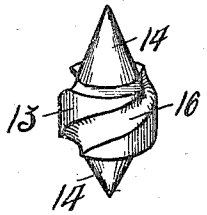


Fig. 5.

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UNITED STATES PATENT OFFICE.

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LAWN-SPRINKLING MEANS.

1,192,743. Specification of Letters Patent. Patented July 25, 1916.

Application filed January 14, 1916. Serial No. 72,073.

To all whom it may concern:

Be it known that I, JOHN A. BROOKS, a citizen of the United States, and a resident of Toledo, in the county of Lucas and State of Ohio, have invented a certain new and useful Lawn-Sprinkling Means; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the characters of reference marked thereon, which form a part of this specification.

This invention relates to plumbing devices and particularly to lawn sprinkling means.

The object of my invention is the provision of an improved lawn sprinkling means having a fountain or spray head which is normally disposed in inoperative position and is automatically movable to operative position by the outward pressure of the water when turned on.

A further object of my invention is the provision, in a means of the class described, of a cap or closure member which is carried by the fountain or spray head for movements therewith, and is automatically operable to move into and out of casing closing position with respect to the fountain head when lowered and raised, respectively, whereby to enhance the practicability and commercial value of devices of the class described.

A further object of my invention pertains to the improved drainage feature thereof, which permits a drainage of water from the sprinkling means to a point below frost level.

The invention is fully described in the following specification, and while, in its broader aspect, it is capable of embodiment in numerous forms, a preferred embodiment thereof is illustrated in the accompanying drawings, in which,—

Figure 1 is an elevation of a sprinkling means embodying my invention and comprising a plurality of sprinkling units having a common source of water supply. Fig. 2 is an enlarged central vertical section of the upper end of one of the units embodying my invention with the movable spray head parts in lowered position. Fig. 3 is a similar view thereof with the movable spray head parts in full and raised to operative position with respect to the casing member. Fig. 4 is an enlarged vertical central section of the drainage unit of the set with portions broken away and with the movable spray head parts in lowered inoperative position, and Fig. 5 is a perspective view of the water whirling core-piece of the spray head nozzle.

Referring to the drawings, 1 designates a water supply pipe, which is disposed in the ground preferably below the frost line and has a valve 2, which is controlled from above the ground by a key 3 and is operable to close communication between a portion of the pipe line and the source of supply.

The portion of the pipe line 1, the flow of water to which is controlled by the valve 2, has one or more stand-pipes 4 rising therefrom and located to suit the desired distribution of water therefrom. Each stand-pipe 4 is provided at its upper end with a casing head 5, which is provided at its upper end with an enlarged nozzle-receiving chamber 6, the upper end of which is disposed substantially at the ground level, as shown in Fig. 2. The lower end of the casing head 5 has its passage separated from the chamber 6 by a diaphragm or partition 7 having a central opening 8 therethrough. The lower end of the casing head 5 is connected, in the present instance, to the upper end of the stand-pipe 4 by a coupling member 9.

Located within the chamber 6 of the casing head 5 is a nozzle or spray head 10 having an interior chamber 11, which is provided at its outer end with a water discharge orifice 12 of restricted outwardly flaring form. A core-piece 13 is mounted within the nozzle chamber 11, in the present instance having a friction tight fit therein, and is provided, in the present instance, at each end with a conical projection 14, the upper or outer one of which enters the discharge orifice 12 and is intended to regulate the discharge of water therethrough. It is apparent that the size of the discharge orifice 12 may be varied by a relative adjustment of the outer end or cap portion of the nozzle and the core-piece 13, and such adjustment may be effected either by a movement of the core-piece in one direction or the other within the nozzle, or by an adjustment of the cap member 15 of the nozzle with respect to its body portion, one being threaded to the other. The central portion of the core piece 13, which fits the nozzle chamber 11, closes the passage through said chamber except for the provision of one or

more (two in the present instance) spiral peripheral grooves 16 in said core-piece. These grooves extend from one end to the other of the body portion of the core-piece and cause the water, in its passage therethrough, to have a whirling action. The rapid whirling of the water within the nozzle coöperates with the restricted discharge passage 12 to discharge the water in finely broken-up spray form. The discharging of the water in this finely broken-up form causes a greater amount of oxygen to be carried therewith into the ground on which the spray falls and is therefore of greater benefit to grass or other growing matter.

The nozzle or spray head 10 has a hollow stem 16 projecting downward from its lower end through the partition opening 8 and with its passage in communication with the nozzle chamber 11 below the core-piece 13. The stem 16 is intended to have reciprocatory movements through the opening 8 to permit a raising and lowering of the nozzle 10 with respect to the casing 5, and is provided a predetermined distance below the partition 7, when the nozzle is in its normal lowered position, with an enlargement 17 having a gasket-faced shoulder 18 at its upper end. The shoulder 18 is intended to coact with the partition 7 when the nozzle and stem are raised and to both limit the upward movement of the nozzle and stem and to close communication between the upper and lower end portions of the casing passage around the stem 16.

It is apparent that when water under pressure is turned into the pipe 1, it will enter the standards 4 connected thereto, and its outward passage through the casing 5, nozzle 10 and stem 16 will act against the enlarged lower end 17 of the stem and also against the core-piece 13 to effect a raising of the nozzle and stem to operative position, the permissible out stroke of the nozzle being sufficient to place it above the outer end of the casing 5, as shown in Fig. 3. The passage of the water through the spiral grooves 16 of the core-piece also tends to raise and hold the nozzle in elevated position when in use.

The upper open end of the casing chamber 6 is normally closed by a cap or closure member 19, which seats at its edge within the open end of the casing and is pivotally carried by the nozzle 10 for swinging movements in a vertical plane with respect thereto. The closure member 19, in the present instance, has a pair of spaced legs 20 projecting down from the central portion thereof, and pivoted to the nozzle, as at 21, in straddling relation thereto, thus permitting the closure member to swing downward at either side of the nozzle when the nozzle is raised to exposed or operative position above the casing 5. When the nozzle again lowers into inoperative position within the casing 5 the closure member 19 is drawn thereby into closing relation to the upper end of the casing, as is evident from the drawings. When the nozzle is in raised or operative position, the closure member 19 is disposed at one side thereof and out of obstructing relation to the spray that is discharged from the nozzle. The seating of the closure member 19 in the upper end portion of the casing 5 limits the lowering movement of the nozzle and its stem within the casing.

It is preferable, where a plurality of fountain units or spray heads are connected to a common supply pipe 1, to adapt one of the uprights of a set to serve as a drainage means for the entire system or set of fountains. For this purpose the nozzle-receiving chamber of one of the casings 5 is made of greater depth than the others, and provided at its lower end with one or more laterally extending drainage passages 22 at a point below the frost level. In the present instance, the drainage casing is designated 5^a, and its lengthened nozzle chamber is designated 6^a (see Fig. 4). The nozzle stem is correspondingly lengthened, as shown at 16^a, to adapt it to project through the partition 7^a at the lower end of the chamber 6^a and a desired distance therebelow. The nozzle stem is provided with an enlargement 17 having a gasket-faced shoulder 18 at its upper end for coacting with the under side of the partition 7^a to close the passage therethrough around the stem 16^a when the nozzle is raised, the same as described with respect to the other fountain units of the system.

It is apparent that when the valve 2 has been closed, water contained in the standpipe 4 and casing 5 of each fountain unit will drain downward therefrom through the pipe 1 and thence upward into the draining unit through the partition 7^a therein and outward to the soil through the drainage passages 22. As such drainage passages are disposed below frost level, the water in the entire sprinkling system will be drained therefrom on a level with the drainage passages 22, as is apparent.

I wish it understood that my invention is not limited to any specific construction, arrangement or form of the fountain units, or to the number and arrangement thereof, as the invention is capable of numerous modifications without departing from the spirit of the claims.

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

1. In combination, a casing, a nozzle longitudinally movable in said casing, said nozzle normally standing in one position relative to the casing and movable to a differ-

ent position relative thereto by fluid pressure at its inner end, and a closure member for the outer end of the casing, said member being pivotally carried by the nozzle and having its opening and closing movements with respect to the casing controlled by movements of said nozzle.

2. In combination, a casing having an internal shoulder forming a restricted opening, a nozzle mounted in said casing at one side of the shoulder and having a stem part projecting through the restricted opening and provided at the opposite side of the shoulder with an enlargement for coacting with the shoulder to limit the outward movements of the nozzle, said nozzle normally standing in closed position within the casing and movable without the casing by fluid pressure, and means carried by the nozzle for movements therewith and transversely thereof and operable to close the outer end of the casing when the nozzle is in normal position.

3. In combination, a casing having communication at its inner end with a source of fluid pressure supply, a fluid discharge nozzle mounted for limited longitudinal movements in said casing and adapted to be moved outward from normal position within the casing when fluid under pressure is turned into the casing back of the nozzle, and a closure member for the outer end of the casing pivotally carried by said nozzle and movable into inoperative position at one side of the nozzle when the nozzle is moved outward, and into casing closing position when the nozzle is moved inward.

4. In combination, a water supply pipe in communication with a source of water under pressure, a valve for closing a portion of said pipe to the source of supply, a plurality of fountain units connected to the portion of said pipe which is separated from the water source by said valve, one of said units having a drainage passage which is normally open to the other units, and means carrying a spray head and disposed within the unit having said drainage passage, said means being automatically operable to place the spray head in operative position and to close the communication between said drainage passage and said other units when water under pressure is admitted to the portion of the pipe containing said units.

5. In combination, a valve-controlled fluid supply pipe, a plurality of fountain units rising from said pipe, and each comprising a casing having a restricted drainage passage, a nozzle mounted for vertical movements in said casing and having a stem part projected through said drainage passage and provided below the passage with an enlargement which coacts with an end of the passage wall to limit the outward movements of the nozzle with respect to the casing when water pressure is exerted outward against the nozzle and also serving to close said passage when the nozzle is in raised operative position, and one of said casings having a drainage opening to the soil disposed above its drainage passage, said drainage opening being in communication with the casings of the other fountain units through said pipe and a portion of the unit in which the drainage opening is disposed.

In testimony whereof, I have hereunto signed my name to this specification.

JOHN A. BROOKS.