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E. C. CHAMBERS

SPRINKLER

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Fig. 1.

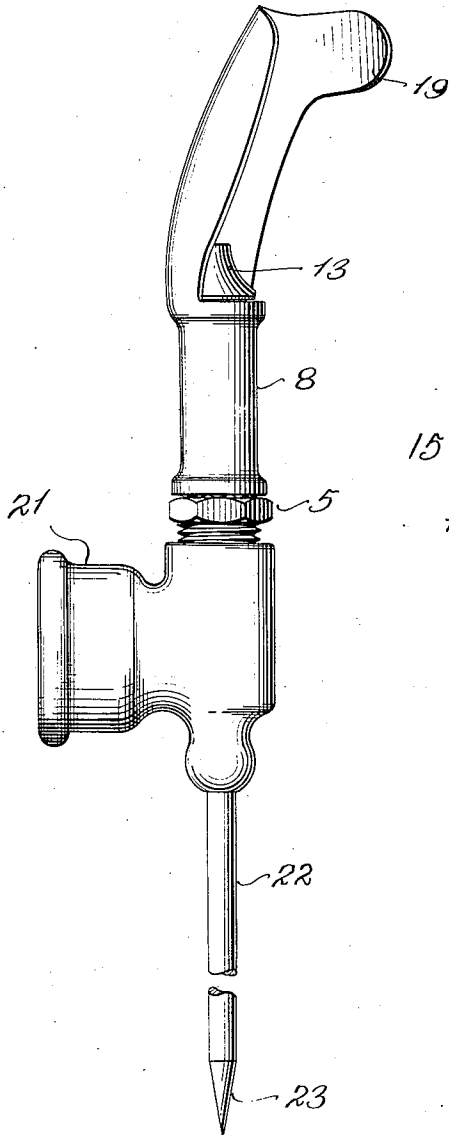
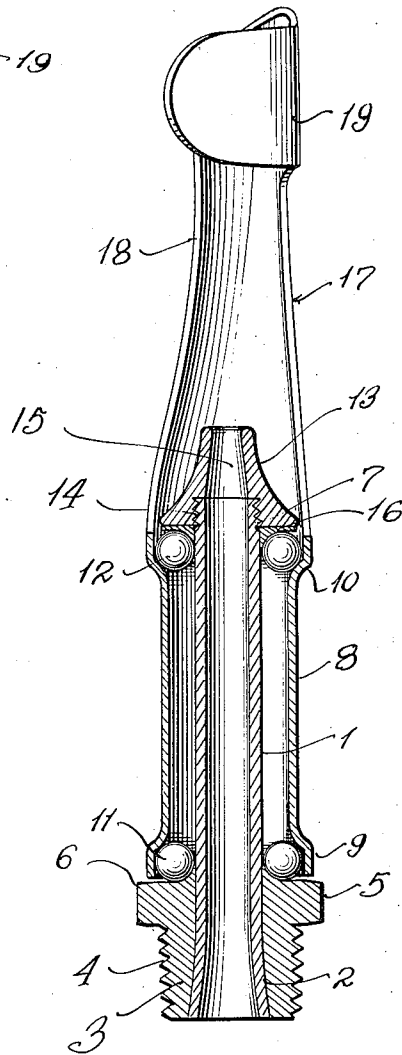


Fig. 2.



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UNITED STATES PATENT OFFICE.

EDWARD C. CHAMBERS, OF JACKSONVILLE, FLORIDA.

SPRINKLER.

Application filed September 3, 1921. Serial No. 498,242.

To all whom it may concern:

Be it known that I, EDWARD C. CHAMBERS, a citizen of the United States, residing at Jacksonville, county of Duval, State of Florida, have invented certain new and useful Improvements in Sprinklers, of which the following is a specification.

This invention relates to a sprinkler of the type adapted for use in distributing water over a large area as, for instance, on lawns, gardens and the like.

In the usual types of sprinklers such as are used for this purpose, where the head of the sprinkler is of the rotating type turned by the efflux of water through one or more orifices, the rotating part easily becomes rusted or worn and clogged with sand and refuses to function.

In order to obviate the above disadvantages of the usual types of sprinklers, the present invention has for one of its objects the provision of a sprinkler in which the rotating head is so constructed as to give a maximum of service with a minimum of wear.

Another object of the present invention resides in providing a sprinkler in which a stream of water emitted from an unrestricted nozzle opening impinges against and rotates a spreader plate, and the said spreader plate may have a sleeve which fits over the nozzle opening and is mounted on ball bearings.

A further object resides in so associating the spreader plate and nozzle that the latter has a tendency to dislodge and fling away any particles of sand which may have accumulated on the sprinkler when the same is not in use.

A further feature resides in the construction of a spreader having opposing faces, one of which forms a deflecting surface receiving the nozzle stream and directing it onto the other face which forms a reaction surface whereby the spreader is rotated, a projecting fin carried by the reaction surface serves to distribute the water in rain-like droplets.

In the drawings annexed hereto and forming a part of this specification and in which I have illustrated a preferred embodiment of the invention:

Figure 1 is a side elevation of the sprinkler, and

Fig. 2 is a vertical central section of the nozzle tube and spreader plate sleeve.

In detail:

The sprinkler, as herein shown, comprises a nozzle tube 1 having a flared or tapered lower end 2 which receives the nipple 3, said nipple having its lower end threaded as shown at 4 and the upper portion thereof formed into a hexagon 5 or the like adapted to receive the jaws of a wrench. The upper face 6 of the hexagon 5 is perfectly flat and smooth for a purpose to be hereinafter set forth. The nozzle tube 1 is also threaded at its upper end as indicated at 7.

Surrounding the nozzle tube 1 is a sleeve 8 having a ball race 9 integral with its lower end and a similar ball race 10 integral with the upper end. The said ball races 9 and 10 receive the sets of balls 11 and 12 in the manner shown, the bottom balls resting on the upper face 6 of the hexagon 5, while the upper set of balls 12 rest on the ball race and against the nozzle tube 1 and are confined by the nozzle tip or head 13 which is threaded as at 14 to fit on the upper end of the nozzle tube 1 and is also apertured as at 15 to permit the water to leave the same. The nozzle tube may be provided on its under face with a bearing plate 16 contacting with the balls, said bearing plate may be in the form of a loose washer.

Integral with the upper portion of the sleeve 8 is a spreader having curved adjacent faces 17 and 18 which provide, therebetween, a substantially helical channel wherein the face 18 acts as a deflecting surface guiding the water onto face 17 which forms a reaction surface, whereby the spreader is rotated, the water finally leaving by way of the projecting fin 19, said fin disintegrating the water into a spray of droplets.

The nipple 3 is screwed into an elbow 20 having the threaded connection 21 adapted to be secured to the hose or the like, said elbow being provided with a spur 22 having a point 23 whereby the said spur may be inserted in the ground to hold the sprinkler upright.

In assembling the sprinkler the nozzle tube 1 is inserted up through the tapered opening in the nipple 3; then the sleeve 8 is slipped over the nozzle tube and the sets of balls 11 and 12 are placed in position, after

which the washer 16 and nozzle tip 13 are assembled with respect to the nozzle tube 1 and serve to hold the sleeve 8 in assembled relation with respect to the nozzle tube 1, 5 and also to hold the nozzle tube 1 and the nipple 3 in assembled relation.

It will be seen from the foregoing that I have provided a sprinkler in which the rotating part is mounted on ball bearings and 10 consequently is rotated by the very slightest pressure of water.

It is also obvious that the construction of the sprinkler makes it very inexpensive to manufacture. Preferably, the entire sprinkler 15 is formed of non-corrodible material which adds materially to the life of the device.

While I have herein described a specific form of the invention, it is nevertheless to 20 be understood that in carrying the same into practice I may resort to any and all modifications falling within the scope of the appended claims.

I claim:

25 1. The combination in a sprinkler, of a nozzle and a spreader rotatably supported to receive the discharge therefrom and having opposing faces of unequal area, the lesser face being disposed to receive the discharge 30 from the nozzle and to direct it to the opposing face, said last named face forming a reaction and diffusing surface whereby the spreader is rotated and distributes the fluid issuing from said nozzle.

35 2. The combination in a sprinkler, of a nozzle and a spreader rotatably supported to receive the discharge therefrom and hav-

ing opposing faces of unequal area forming a torsional path therebetween, the lesser face being disposed to receive the discharge from 40 the nozzle and to direct it to the opposing face, said last named face forming a reaction and diffusing surface whereby the spreader is rotated and distributes the fluid issuing 45 from said nozzle.

3. The combination in a sprinkler, of a nozzle and a spreader rotatably supported to receive the discharge therefrom and having opposing faces, one of said faces having a distributing fin whereby the faces are 50 of unequal area, the lesser face being disposed to receive the discharge from the nozzle and to direct it to the opposing face, said last named face forming a reaction and diffusing surface whereby the spreader is ro- 55 tated and distributes the fluid issuing from said nozzle.

4. The combination in a sprinkler, of a base, a nozzle mounted thereon, and a spreader anti-frictionally mounted for rota- 60 tion on said nozzle and receiving the discharge therefrom and having opposing faces one of which is provided with a fin whereby the faces are of unequal area, the lesser face being disposed to receive the discharge from 65 the nozzle and to direct it to the opposing face, said last named face forming a reaction and diffusing surface whereby the spreader is rotated and distributes the fluid issuing from said nozzle.

In testimony whereof I hereunto affix my signature.

EDWARD C. CHAMBERS.