No. 683,645. Patented Oct. 1, 1901.

H. GIBBS.

ROTARY LAWN SPRINKLER.

(Application filed May 20, 1901.)

(No Model.)

Fig. 1.

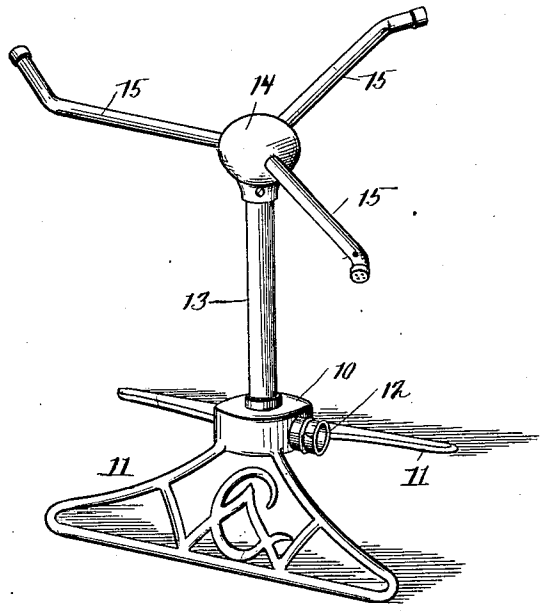


Fig. 2.

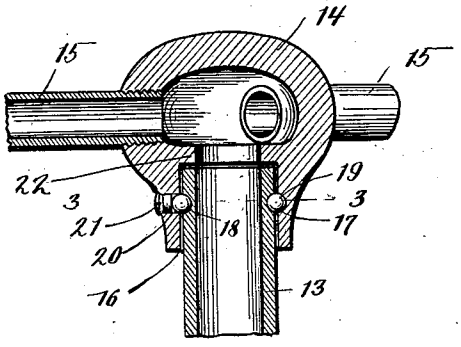
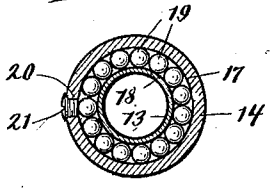


Fig. 3.



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UNITED STATES PATENT OFFICE.

HENRY GIBBS, OF CHICAGO, ILLINOIS, ASSIGNOR TO W. D. ALLEN MANUFACTURING COMPANY, OF SAME PLACE.

ROTARY LAWN-SPRINKLER.

SPECIFICATION forming part of Letters Patent No. 683,645, dated October 1, 1901.

Application filed May 20, 1901. Serial No. 61,006. (No model.)

To all whom it may concern:

Be it known that I, HENRY GIBBS, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Rotary Lawn-Sprinklers, of which the following is declared to be a full, clear, and exact description.

My invention relates to rotary lawn-sprinklers operating on the familiar Barker's mill principle and seeks to provide a simple and effective construction by which the spray pipes or jets may be mounted to freely revolve upon the end of the water-supply pipe.

With this end in view my invention consists in the features of construction set forth in the following description, illustrated in the accompanying drawings, and more particularly set forth in the appended claims.

In the drawings, Figure 1 is a perspective view of the improved rotary lawn-sprinkler. Fig. 2 is a detail view, in vertical section, of the end of the supply-pipe and the coupling supporting the spray pipes or jets. Fig. 3 is a view in cross-section taken on the line 3 3 of Fig. 2.

The sprinkler is preferably mounted upon a stand comprising the base 10, provided with the diverging supports 11 and the coupling 12, by which the sprinkler may be connected to an ordinary hose-section. An upright metal pipe 13 is secured to the base 10 and supports on its upper end the hollow head or coupling 14, which is provided with the spray pipes or jets 15, preferably threaded into the coupling, as shown in Fig. 2. The spray-pipes 15 may be of any suitable formation and are provided with any desired arrangement of discharge-orifices, it being only necessary that certain of the orifices shall discharge the water tangentially to revolve the head 14 and spray-pipes 15 in the well-known manner. The cylindrical outer surface of the upper end of the supply-pipe 13 is preferably finished and the hollow head or coupling 14 is provided with a cylindrical bore 16, the inner surface of which is finished to loosely fit the upper end of the pipe. The surfaces of the bore of the coupling and of the end of the pipe are provided with oppositely-disposed annular grooves or raceways 17 and 18, formed in the body of the metal, and in the grooves are interposed between the end of the pipe and the coupling a number of antifriction-balls 19.

In assembling the parts the head or coupling 14 is placed over the end of the supply-pipe 13, with the grooves 17 and 18 opposite one another, and the balls are then inserted through an opening 20, which when all the balls have been placed in position is closed to retain the balls in position, preferably by a screw-plug 21, as shown.

It will be seen that I have provided a simple and inexpensive construction which may be easily assembled and in which the peculiar arrangement of the supporting and bearing balls and the grooves therefor serve to support the spray-pipes in position to freely revolve with little friction upon the end of the supply-pipe. As previously stated, the bore 16 of the head or coupling loosely fits the upper end of pipe 13 to avoid friction and wear; but the fit is preferably snug enough to permit only a slight amount of play between the parts and to prevent an undue amount of leakage. Preferably, also, the head or coupling 14 is provided at the upper end of the bore 16 with an inwardly-extending flange or shoulder 22, which projects over but is spaced slightly apart from the upper end of the pipe 13. This flange prevents dirt and sand from working into the bearing between the supply-pipe and the head.

It is obvious that changes may be made in the details of construction without departure from the essentials of the invention. For example, two rows of balls could be employed instead of one, if desired.

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

1. In a lawn-sprinkler, the combination with a liquid-supply pipe having a cylindrical end portion, of a single-piece hollow coupling provided with radial spray pipes or jets having tangentially-disposed discharge-orifices, said coupling having a short cylindrical bore arranged at an angle to said spray-pipes and loosely fitting the end of said supply-pipe, annular grooves in the opposed cylindrical faces of said bore and said pipe and arranged inter-

mediate the ends of said parts, and bearing-balls interposed in said grooves for securing said coupling to the end of said supply-pipe.

2. In a lawn-sprinkler, the combination with a liquid-supply pipe having a cylindrical end portion, of a single-piece hollow coupling provided with radial spray pipes or jets having tangentially-disposed discharge-orifices, said coupling having a short cylindrical bore arranged at an angle to said spray-pipes and loosely fitting the end of said supply-pipe, annular grooves in the opposed cylindrical faces of said bore and said pipe and arranged intermediate the ends of said parts, bearing-balls interposed in said grooves for securing said coupling to the end of said supply-pipe, an opening into one of said grooves through which said balls may be inserted, means for closing said opening and a shoulder at the upper end of said bore projecting over the end of said pipe.

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