(No Model.)

J. A. WHITE & J. W. GRAY.

SPRINKLER.

No. 347,405. Patented Aug. 17, 1886.

Fig. 1.

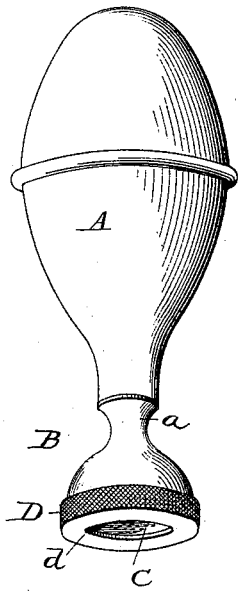


Fig. 2.

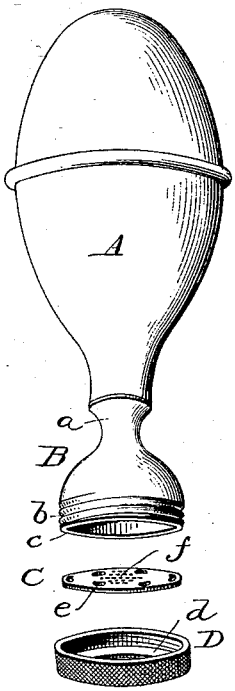


Fig. 3.

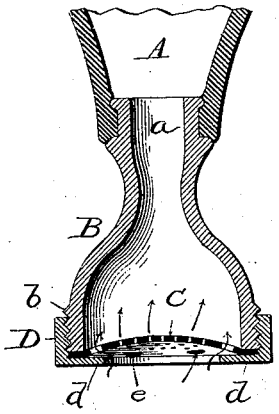


Fig. 4.

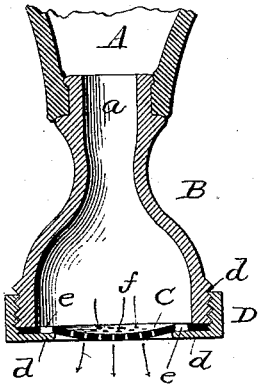
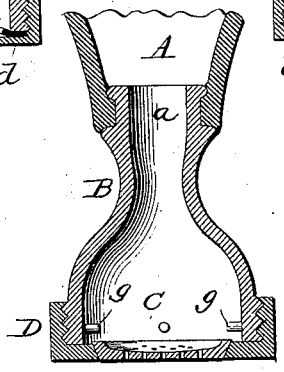


Fig. 5.



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UNITED STATES PATENT OFFICE.

JOSEPH A. WHITE AND JOHN W. GRAY, OF HARTFORD, CONNECTICUT; SAID WHITE ASSIGNOR TO SAID GRAY.

SPRINKLER.

SPECIFICATION forming part of Letters Patent No. 347,405, dated August 17, 1886.

Application filed May 5, 1886. Serial No. 201,222. (No model.)

To all whom it may concern:

Be it known that we, JOSEPH A. WHITE and JOHN W. GRAY, of Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Sprinklers, of which the following is a specification.

Our invention relates to devices for sprinkling plants and clothes and for other like uses; and it consists in a novel construction, whereby the water is allowed to enter freely to rapidly fill the body of the sprinkler, but is permitted to escape only through the fine perforations of the sprinkler-rose or perforated disk.

Prior to our invention sprinklers have been made having special supply-inlets provided with independent inwardly-opening valves; but by our improved construction we are enabled to dispense with such independent valves, and to cause the disk, plate, or other body in which the perforations are formed, to serve also as the inlet-valve.

In the accompanying drawings, Figure 1 is a perspective view of our improved sprinkler; Fig. 2, a perspective view of the parts separated; Figs. 3 and 4, sectional views illustrating the action of the device in filling and discharging; Fig. 5, a view illustrating a modification.

A indicates a rubber or elastic bulb, for which a cylinder and piston may of course be substituted, though the bulb is preferred. Attached to the end of the bulb and communicating with its interior is a bell-shaped sprinkler-body, B, having a suitable neck, *a*, for attachment to the bulb, and an external screw-thread, *b*, around its lower edge, when the device is held as in Figs. 1 and 2. The lower edge of the bell-shaped bowl B is turned true and is reduced to a comparatively thin or narrow annular bearing-face, *c*, for a purpose presently explained.

C indicates a disk, preferably made of rubber, leather, or like flexible material, and D a cap, which screws upon the threaded lower portion of the bowl B.

The disk C is left intact at its outer edge, to permit it to be clamped firmly between the lower edge or face, *c*, of the bowl and the radial flange *d* of cap D, thus holding the disk in place and forming a packing to produce a water-tight joint between the bowl and cap. Just within the circle of rim or edge *c*, we form a series of elongated holes, *e*, of a size to permit water to flow through them freely and rapidly to fill the bulb A. These holes *e* fall within the width of flange *d* of cap D, and when the disk lies flat upon said flange they are closed thereby; but if the disk be lifted up off said flange the holes are opened and water is permitted to enter freely through the large central opening of the cap and to pass thence through the holes *e* and into the bulb.

When pressure is applied to the bulb, the water bearing upon the disk presses it firmly down upon the flange *d*, thus closing the holes *e* and compelling the water to escape through the fine perforations *f* alone. It will thus be seen that when the bulb is compressed and the bowl or sprinkler is immersed in water the expansion of the bulb will cause it to fill quickly with water, and that upon again compressing the bulb the water will be forced out in a fine shower or spray.

It will be readily perceived that instead of a flexible disk a disk or valve of metal or other inelastic material, faced with suitable packing material, or ground to make a close joint, may be used, suitable studs or stops being provided to limit the play of the disk. Such a construction is illustrated in Fig. 5, in which the disk is made conical and is fitted to a seat of like form. Stops *g*, projecting inwardly from the bowl or shell B, limit the rise of the disk and prevent its displacement. The action is precisely the same as under the previous construction, except that the water flows inward between the periphery or edge of the disk and its seat.

The disk C may be either concave or convex, and may also be of any desired configuration—that is, circular, hexagonal, or square—as may be found desirable.

While we are aware that it is not broadly new to provide a sprinkler with different-sized openings to permit the ingress and egress of water, we believe ourselves to be the first to provide a sprinkler with a single disk which will automatically adapt itself to the purposes desired.

Having thus described our invention, what we claim is—

1. In a sprinkler, the combination of a sprinkler-bowl and a perforated disk, movable to and from the seat therein, whereby it is adapted to permit a free inflow of water when the air is exhausted from the bowl, and to compel the water to flow through the perforations when pressure is applied upon the water.

2. The herein-described sprinkler, consisting of a water-holder provided with a bowl, B, cap D, having flange *d*, and disk C, provided with fine perforations *f*, and movable toward and from the cap D, substantially as shown.

3. In combination with body A, bowl B, and cap D, having flange *d*, a flexible disk, C, provided with holes *e*, directly over flange *d*, and with smaller holes, *f*, over the central opening of the cap.

4. In a sprinkler, a combined valve and packing consisting of a flexible disk, C, provided with holes *e* and clamped between a bowl, B, and a cap, D, the former provided with face *e* and the latter with a flange, *d*, immediately beneath the holes *e*.

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