

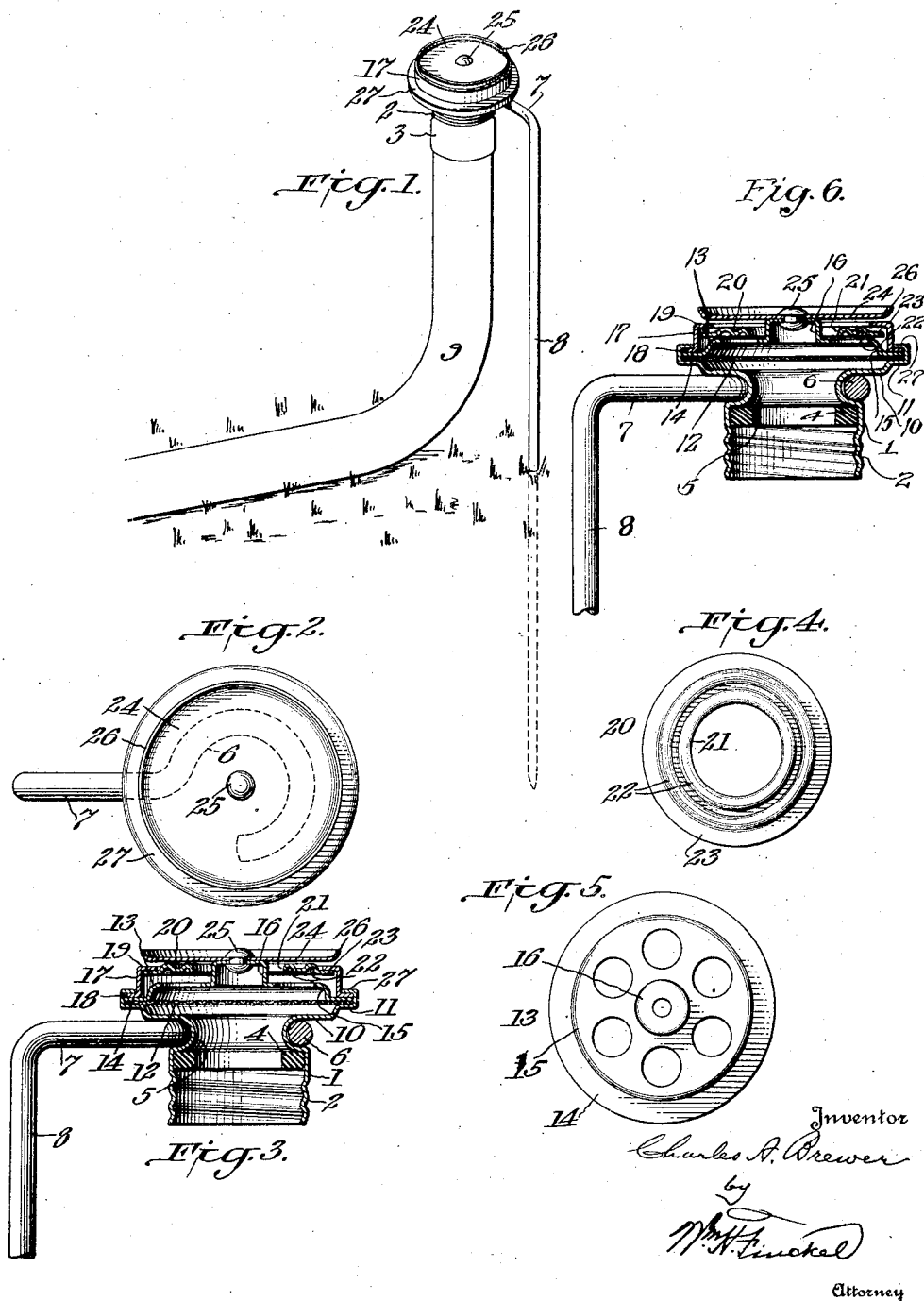
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SPRINKLER

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UNITED STATES PATENT OFFICE.

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SPRINKLER.

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The object of this invention is to provide a self-cleaning sprinkler for watering lawns and for other purposes where it is desired to distribute water and other liquids in the form of spray or a film.

The invention consists of a sprinkler head containing a floating gravity plate with which the liquid contacts and through which it escapes to a distributing disk which preferably is stationary and which throws off the liquid in a spray or film, this floating plate being responsive to the pressure of the liquid to catch dirt and throw it off under pressure, and being interposed between the disk and a stationary perforated plate in the head. In the preferred construction a screen is arranged in the head below the perforated plate which serves to check the outflow of dirt and sediment; and the head is adapted to be rotated in a holder so that it may be readily attached to a hose by screwing the head on the hose.

The invention also consists in the assembling means by which the sprinkler may be economically manufactured.

These and other features of the invention will be explained now in detail and the invention hereinafter finally set forth in the claims following.

In the accompanying drawings illustrating the invention, in the several figures of which like parts are similarly designated, Figure 1 is a perspective view showing the invention mounted for use. Fig. 2 is a top plan view, and Fig. 3 is a vertical section of the sprinkler and part of the holder. Fig. 4 is a top plan view of the floating plate. Fig. 5 is a top plan view of the stationary plate. Fig. 6 is a view like Fig. 3, but with the floating plate at rest.

The sprinkler head is a two-piece casing or shell comprising a base 1 having a screw-threaded member 2 to couple with a hose coupling 3, either of which may have the gasket 4, and above this is the groove 5 to engage with a circular open eye 6 of the holder 7 loosely so as to permit the sprinkler head to be turned freely on and off the hose. Said eye may stand off from a standard 8 adapted to be driven into the earth to support the sprinkler when used on a lawn. The holder, however, is not a necessary part of the invention, since the sprinkler may be used otherwise and other forms of support may be employed. The eye 6 permits rotation of the sprinkler in order to couple it

with the hose 9 or other medium for supplying liquid to it for distribution. The eye being open, as shown by the dotted lines in Fig. 2, the sprinkler may be readily inserted in it, but without danger of slipping out, although it is capable of being removed. The base flares out laterally from the member 2, as shown at 10, and it is provided with a seat 11 to receive and support a screen 12 of wire netting or other foraminous or reticulated construction. This seat also supports above the screen, the perforated plate 13, having the bearing flange 14, the elevated perforated portion 15, and the central elevated knob 16. The top portion 17 is of an approximate Z shaped cross section having its lower outwardly extending flange 18 resting upon the flange 14, and its upper flange 19 extending inwardly. In other words, the top portion is a flanged ring-like structure.

Beneath the top portion 17 and above the perforated plate is the floating plate 20, of annular form, provided with the central opening 21, which encircles the knob 16, and having the reenforcing embossments 22, and a flat rim 23 which is engaged by the flange 19 of the top portion.

24 is the distributing disk mounted upon the knob 16 and preferably secured thereto, as by the rivet 25. This disk preferably has the upwardly flaring rim 26.

The distance between the distributing disk and the floating plate in the released position of the latter, Fig. 6, is sufficient to allow the liquid to carry away any sediment that might pass through the screen, the screen serving as a sieve. Any particles passing through the screen would be considerably smaller than the space around the floating plate in its released position.

The parts being arranged as in Fig. 3, they are secured by closing down the rim flange 27 of the flared portion of the base over the flange 18 of the top portion 17, leaving the floating plate 20 free to respond to pressure within the sprinkler head and to direct the flowing liquid through its hole 21 against the knob 16 and the distributing disk 24, whereby it is diffused in spray or film form. When the pressure is on, the floating plate 20 is raised into contact with the flange 19, as shown in Fig. 3, thus giving the liquid free egress through the perforated plate 13. When the pressure is cut off the floating plate is free to fall from that

position and rest slightly above the elevated portion 15 of the stationary plate, whence it is lifted upon the restoration of pressure. This responsivity of the floating plate to differences in pressure aids in rendering the sprinkler self-cleaning.

The holder shown not only permits the turning of the sprinkler to couple it with the hose and uncouple it therefrom, but it also serves to hold the sprinkler in an upright position to ensure the correct distribution of the liquid.

Of course the sprinkler is readily detachable from the hose.

The parts of the sprinkler may be readily made of sheet metal, stamped or pressed to shape, and the construction is so designed as to reduce the cost of manufacture very materially.

As already indicated, the floating plate drops by force of gravity when the liquid pressure is partially or completely cut off, and this allows accumulated particles, sediment, etc., to be released through the spray opening 21 and the liquid is again allowed to flow freely, thus making possible the cleaning of the sprinkler by turning on or off the liquid.

Variations in the details of construction are permissible within the principle of the invention and the claims following.

What I claim is:—

1. A sprinkler, having a head provided with a liquid inlet, a stationary perforated plate mounted in the head and having a central upstanding knob, an outlet in said head, a distributing plate stationarily mounted above the outlet, and an annular floating plate located between the stationary perforated plate and said outlet and encircling said knob and responsive to variations in

pressure within the sprinkler head and serving to render the sprinkler self-cleaning.

2. A sprinkler, having a head provided with a liquid inlet and a liquid outlet, a stationary perforated plate mounted in the head, an annular floating plate located between the stationary perforated plate and said outlet and responsive to variations in pressure within the sprinkler and serving to render the sprinkler self-cleaning, and a distributing disk stationarily mounted above the outlet.

3. A sprinkler, having a head provided with a liquid inlet and a liquid outlet, a distributing plate stationarily mounted above the outlet, a stationary perforated plate mounted in the head and having an elevated portion and a central knob rising above said elevated portion, and an annular floating plate located between the stationary perforated plate and said outlet and encircling said knob and responsive to variations in pressure within the sprinkler and serving to render the sprinkler self-cleaning.

4. A sprinkler, having a base portion provided with means for coupling it with a liquid supply and a laterally flaring upper portion containing a seat, a screen mounted on said seat, a stationary perforated plate mounted on the seat and above the screen, a top member containing an outlet for the liquid and provided with a flange resting above the stationary plate, a portion of the base being closed down on said flange and serving to unite the parts, and a floating plate interposed between the perforated plate and the top portion.

In testimony whereof I have hereunto set my hand this 20th day of April A. D. 1923.

CHARLES A. BREWER.