May 21, 1935. H. L. HENRY 2,002,178

SPRINKLER

Filed Jan. 16, 1933

Fig. 1.

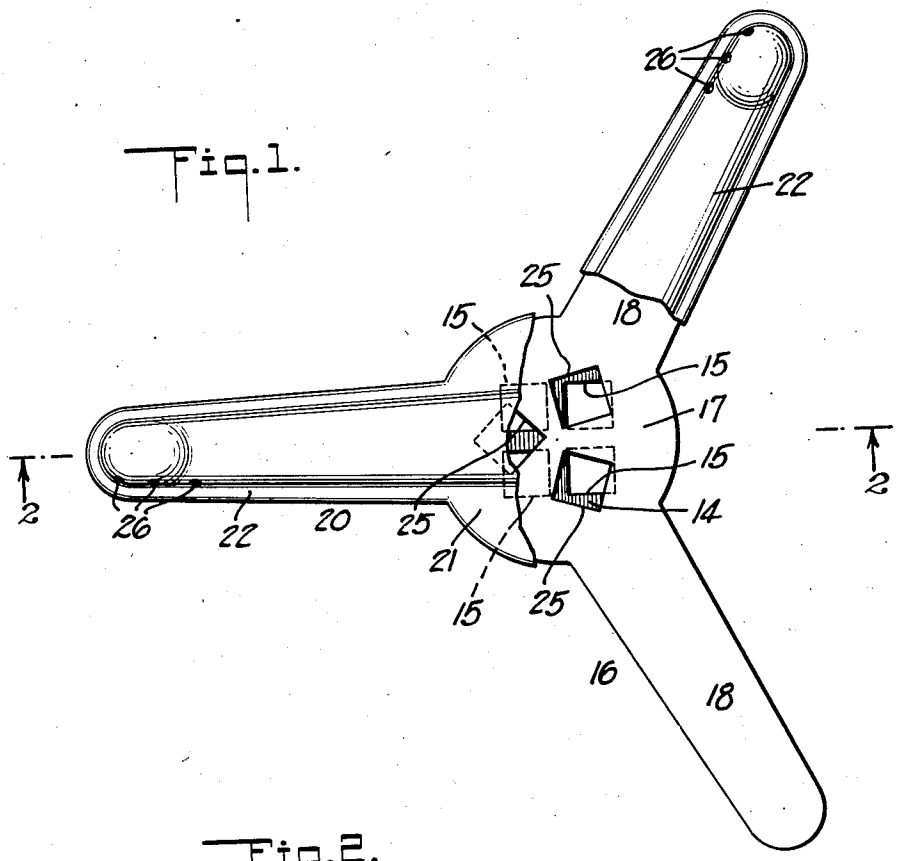


Fig. 2.

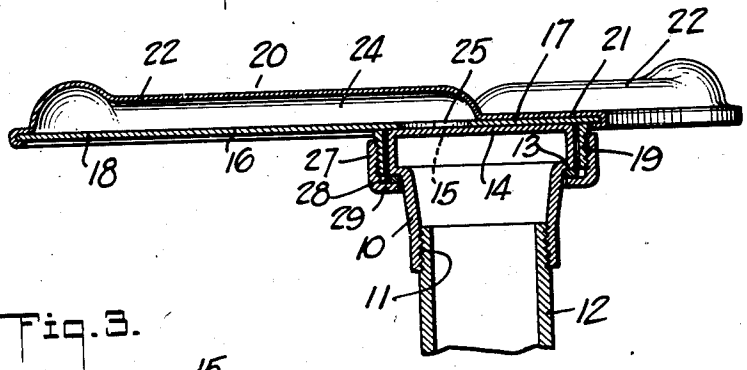
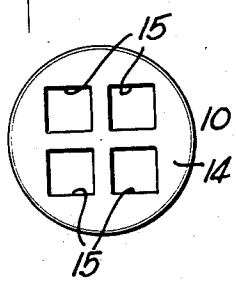


Fig. 3.



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Patented May 21, 1935

2,002,178

UNITED STATES PATENT OFFICE

2,002,178

SPRINKLER

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Application January 16, 1933, Serial No. 652,069

1 Claim. (Cl. 299—18)

This invention relates to sprinklers of the general character embodied in my United States Patent No. 1,766,514, issued June 24, 1930, and embodying means whereby an area bordered by straight lines can be uniformly sprinkled by the automatic regulation of the flow of water from the sprinkler during the operation thereof.

It is the purpose of the present invention to embody the principle of the above described sprinkler in an extremely simple structure capable of being inexpensively manufactured and of functioning at maximum efficiency, to effect the uniform sprinkling of an area bordered by straight lines, all with minimum wear on the working parts of the sprinkler so as to insure long life of the latter.

Only one form of the invention will be described, following which its novel features will be pointed out in claim.

In the accompanying drawing

Figure 1 is a plan view of the sprinkler with portions broken away to expose internal construction;

Figure 2 is a vertical sectional view taken on the line 2—2 of Figure 1, and looking in the direction of the arrows;

Figure 3 is a plan view of the mounting or stationary portion of the sprinkler.

Similar reference characters designate similar parts in each of the several views.

Referring specifically to the drawing, this invention comprises a mounting or base member in the form of a cylindrically shaped tubular body 10 internally threaded at one end as indicated at 11 so as to enable the body to be screwed onto a pipe 12 which is adapted to be supported in any suitable manner to occupy a vertical position and to be connected to a source of water supply under pressure. The body 10 is enlarged in diameter at its other end to provide an external annular shoulder 13, and said other end of the body is closed by a wall 14 which is transversely disposed with respect to the axis of the body. In the present instance the wall 14 is illustrated as defining a plane surface in cross section, although it is to be understood that the wall can be either convex, concave or conical in cross section without departing from the spirit of this invention.

The pipe 12 defines a water inlet to the body, and the water supplied to the body is adapted to discharge therefrom through outlets 15 formed in the wall 14. These outlets 15 which are in the form of square openings, are four in number, and are equally spaced about the axis of the body, two diagonally opposite corners of each opening being radially arranged with respect to the axis of the body as clearly shown in Figure 3.

On the mounting or base member defined by the body 10 is supported a rotor comprising a flat plate 16 having a hub 17 and three arms 18 equally spaced circumferentially and radiating from the hub. From the hub an annular flange 19 projects laterally and receives the enlarged end of the body 10, with the wall 14 of the latter abutting the hub. The hub in the present instance defines a plane surface in cross section to correspond with the cross sectional contour of the wall 14, and it will be understood that should the wall 14 be convex, concave or conical in cross section, that the wall formed by the hub will be complementary thereto.

The rotor also includes a second plate 20 having a hub 21 and three arms 22 which are respectively crimped about the edges of the hub 17 and arms 18 of the plate 16, as indicated in Figure 2. The arms 22 are concavo-convex in cross section for coaction with the arms 18 in defining water passages 24, the inner ends of which communicate with inlets 25 formed in the hub 17 of the plate 16. The inlets 25 which are in the form of square openings corresponding in size to the outlets 15 are three in number and are equally spaced about the axis of the body 10, two diagonally opposite corners of each opening being radially arranged with respect to the axis of the body as clearly shown in Figure 1. At the outer ends of the arms 22 in communication with the passages 24 are ports 26 which are disposed tangentially with respect to circles concentric of the axis of rotation of the rotor.

The annular flange 19 is exteriorly threaded to receive a nut 27; and a bearing ring 28 is interposed between the annular shoulder 13 of the body 10 and a radial flange 29 of the nut for co-action in confining the rotor against axial displacement upwardly from the body while permitting free rotation of the rotor.

In the operation of the sprinkler, let it be assumed that water under pressure is being supplied to the pipe 12. It will be noted that the outlets 15 and inlets 25 of the mounting and rotor, respectively, are so disposed relative to each other that each of the inlets will at all times overlap at least a portion of one of the outlets, and that as this overlapped relation of the outlets and inlets varies from a predetermined minimum to a predetermined maximum, and then vice versa during rotation of the rotor, that water will continuously discharge from the ports 26

in constantly varying volumes, such as to effect the uniform sprinkling of a square area in the center of which the sprinkler is located.

The construction above described enables the sprinkler to be inexpensively manufactured from sheet metal by the stamping and drawing processes, all while providing maximum efficiency in operation over a long period of time.

I claim:

A sprinkler comprising a tubular body having a portion formed for connection with a water inlet pipe and having a circular enlarged portion providing an external annular shoulder, said circular enlarged portion being terminated by a transversely disposed wall, said wall having a series of substantially square apertures, a plate mounted for rotary movement on said wall and having a series of substantially square apertures so arranged with respect to said wall apertures that during rotation of the plate each of the plate apertures will overlap one of the wall apertures from a minimum to a maximum and then vice versa, a plurality of distributing arms carried by the plate, there being one thereof for each plate aperture, a hub rotatably fitted over said circular enlarged portion of said tubular body and attached to said plate, and means cooperating with said annular shoulder and with the hub for maintaining the parts in operating relationship.

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