(No Model.)

J. B. HABERLE.

SPRINKLER.

No. 512,291. Patented Jan. 9, 1894.

Fig 2

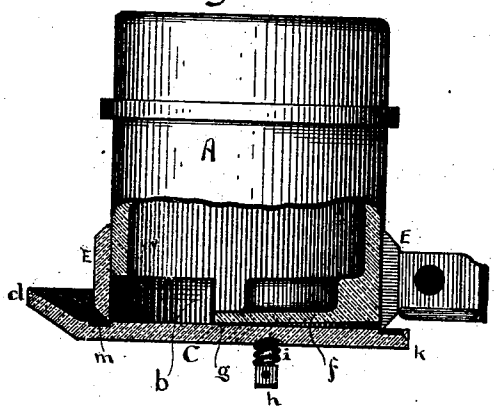
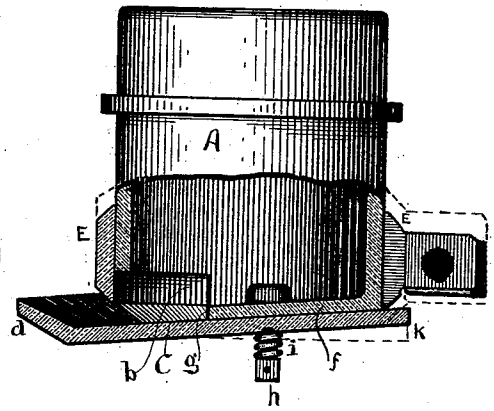


Fig 1



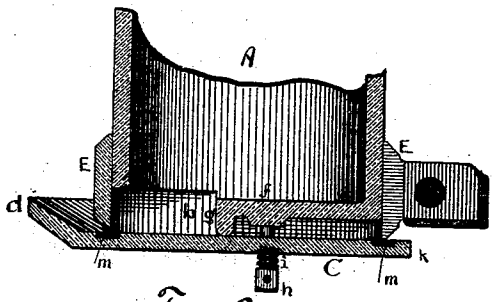


Fig 3

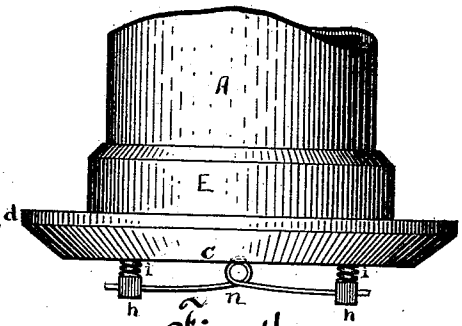


Fig 4

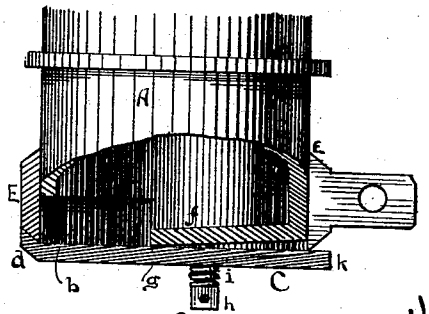


Fig. 5

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SPRINKLER.

SPECIFICATION forming part of Letters Patent No. 512,291, dated January 9, 1894.

Application filed March 31, 1893. Serial No. 468,544. (No model.)

To all whom it may concern:

Be it known that I, JOHN B. HABERLE, of South Bend, in the county of St. Joseph, in the State of Indiana, have invented new and useful Improvements in Sprinklers; and I do hereby declare that the following is a full and accurate description of the same, reference being had to the accompanying drawings, wherein—

Figure 1 is an elevation, partly in section, showing the jet wide open for a heavy spray. Fig. 2 is a similar elevation showing the jet orifice nearly closed for a light spray. Fig. 3 is a sectional elevation showing a modified structure and the jet orifice closed. Fig. 4 is an elevation of the lower part of the head. Fig. 5 is a sectional elevation showing a short or non projecting lip.

This improvement relates to that class of sprinklers wherein the delivery head is a cylinder commonly having a saucer shaped plate to close the open end and a side delivery opening whereby a thin flat stream of water is projected against an upturned lip or edge of said saucer, and by it is deflected and distributed in a fine thin jet or spray over a semicircular area of the ground or street. It has been found necessary in practice to vary the thickness of the issuing jet to adapt it to different locations or conditions of the ground to be sprinkled, and for that reason a ring has been placed on the cylindric head and made adjustable thereon so as to cover the jet orifice more or less completely and thereby regulate and determine the thickness of the issuing jet. It has also been found necessary in practice, that for efficient service with a heavy jet, it is necessary to make the saucer concave in the middle, and this concavity renders it impossible to adjust the regulating ring to deliver a thin jet over a wide area.

To obviate the defects of the sprinkler heads of the class above referred to, I make the jet deflecting saucer movable on a transverse middle axis, so that its deflecting edge may approach or recede from the regulating ring and thereby vary the thickness of the jet uniformly.

In the drawings, A, is the cylindrical sprinkler head similar to those of the class referred to, in common use. Water from the tank or reservoir is received at its upper end and is discharged through the space or orifice *b*. being a notch cut in the side of the head A. The open discharge end of the head A. is covered by the saucer shaped cap C, which is pivoted transversely so that its deflecting lip *d*. may be raised or lowered, to co-operate with the adjustable ring E to regulate and limit the thickness of the issuing jet. There are various ways of providing said saucer cap with a pivotal attachment and these will readily occur to any skilled person. There are also various ways of moving said saucer cap to vary and regulate its adjustment. The methods shown herein are simply those which I have adopted, because for the purpose desired they are simple and efficient.

I partly close the discharge end of the cylinder A with a partial diaphragm *f*, and the front edge *q* of this constitutes a bearing or pivotal edge against which the cap C will rest and pivot, as shown in Figs. 1. 2. and 3, but to cut off and prevent a back flow of water over the cap C at the bearing point *g*. (the pivotal point, above referred to) it is necessary that said cap shall bear against the diaphragm *f* at the point *g*. with a constant pressure and I therefore insert the two screws *h*. *h*. through the cap C. into the body of the head A, and place between the head of the screw and the under side of the cap a spring *i'*. The screws *h*. *h*. and springs *i*. *i*. are placed a little way behind the edge (*g*) for a double purpose, first, to act as keepers and to enable the cap C to pivot on the edge *g*, and second, to cause said cap to open the jet orifice automatically when at liberty to do so. Therefore when the back edge *k* of the cap C is pressed downward, the springs *i*. *i*. will be flexed, and the edge *d* will be raised up; the movement being pivotal on the edge *g*, and so soon as the moving force is removed from the edge *k* the spring will return the cap to the position shown in Fig. 1.

The ring E is attached to the head A, in a manner whereby its rotary movement around said head, causes it also to move toward or away from the cap C. and in so doing, to cover or uncover the jet slot *b* and thereby regulate and control the thickness of the issuing jet. I find it desirable and convenient to arrange said ring and the edge *k* of the cap so that, when said ring descends to cover the slot *b*. it will at a proper time encounter said edge *k*.

and with its further movement, push said edge *k.* downward, and thereupon as the ring descends the edge *d* will ascend and they will co-operate to regulate and determine the thickness of the issuing jet. The continued descent of the ring E will finally cause it to close upon said cap all around, and thereby act as a valve to cut off the flow of water entirely. To perfect this effect, which will be convenient many times, a flexible gasket *m*, may be placed on the face of the cap C. or in a suitable recess therein. Fig. 3, shows the ring closed upon said gasket and acting as a valve. In Fig. 3 the fulcrum or pivot edge *g* is shown extended downward, to form a rib along the front edge of the diaphragm and the cap rolling upon the top of said rib, which may, if desired, be made of elastic material, interposed between the metallic surfaces, to more effectually bar the back flow of water past that point.

The screws *h. h.* might be prevented from being moved backward by the jarring of the sprinkler wagon in service by screwing them hard down upon a shoulder of the bottom of the thread, but this method will not admit of any adjustment of the tension of springs *i.* I therefore perforate the screw heads and pass a spring wire key *n.* through both. This effectually prevents a departure from position and at the same time permits an adjustment of one or both springs or the removal of the cap C. To prevent the displacement of the key *n.* I bend the same in the form of a loop at its central part, and give the same such dimensions as will cause it to engage with an elastic pressure in a little recess made in the outer surface of the cap C whereby it may itself be retained in position.

Having described my invention, I claim—

1. A sprinkler head A. open at one end and a cap C. adapted to rock on one edge of said open end, as upon a transverse pivot, whereby the issuing jet may be controlled as to thickness, and in all positions of said cap said jet will be prevented from issuing on said pivot side, as shown and described.

2. A sprinkler head A open at its delivery end and provided with a partial diaphragm *f* combined with a rocking cap, C. movable upon the edge *g.* of said diaghragm as upon a transverse pivot, and means whereby said rocking cap may be controlled and adjusted to regulate and control the thickness of the issuing jet.

3. A sprinkler head A. open at its delivery end and provided with a jet slot *b* and partial diaphragm *f* combined with a rocking cap C. movable upon the edge *g.* as a transverse pivot, and means for operating said cap to regulate and control the thickness of the issuing jet.

4. The sprinkler head A. provided with a jet orifice *b.* a movable ring E adapted to cover, more or less, said orifice, and a rocking cap C. movable as to said orifice and ring as upon a transverse pivot, and means whereby said ring and cap are moved and adjusted to control and regulate the thickness of the issuing jet.

5. The sprinkler head A provided with a jet orifice *b.* and a partial diaphragm *f.* combined with a rocking cap C, movable upon the front edge *g.* of said diaphragm as upon a transverse pivot, and a movable ring E adapted to cover more or less of said orifice, and means whereby said ring and cap may be coincidently moved to regulate and control the thickness of the issuing jet.

6. The sprinkler head A. provided with a jet orifice *b.* and partial diaphragm *f* combined with a rocking cap C. movable on a transverse axis and a movable ring E. at a point of its movement, adapted to make contact with the edge *k* of said cap, and thereafter, move the same coincidently with the motion of said ring for the purpose of regulating the thickness of the issuing jet, substantially as set forth.

7. The sprinkler head A. provided with a jet orifice *b.* and rocking cap C combined with holding screws *h* and tension springs *i* to retain said cap upon its pivotal surface with an elastic pressure.

8. A sprinkler head A. provided with a jet orifice, a rocking cap C perforated holding screws *h.* and tension springs combined with the elastic, spring key *n* as set forth.

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Witnesses:
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