(No Model.)

A. SPEIRS.

FORCE SPRINKLER.

No. 428,234. Patented May 20, 1890.

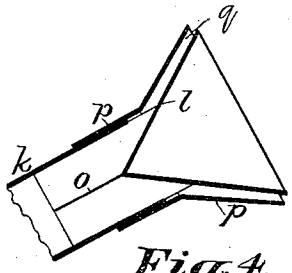

Fig. 4.

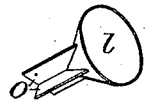

Fig. 5.

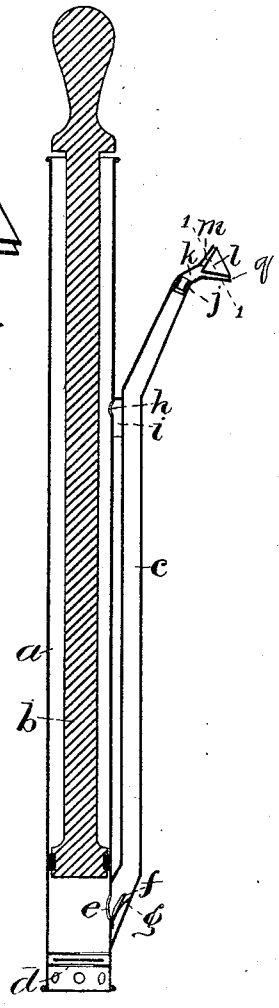

Fig. 1.

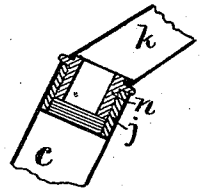

Fig. 2.

Fig. 3.

Witnesses:
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UNITED STATES PATENT OFFICE.

ALEXANDER SPEIRS, OF WINDHAM, MAINE.

FORCE-SPRINKLER.

SPECIFICATION forming part of Letters Patent No. 428,234, dated May 20, 1890.

Application filed July 20, 1889. Serial No. 318,101. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER SPEIRS, of Windham, in the county of Cumberland and State of Maine, have invented certain new and useful Improvements in Force-Sprinklers; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

My invention relates to improvements in force-sprinklers, and especially to such as are portable and adjustable.

It consists of a force-pump having plunger and valves, a spout or nozzle of improved construction, as hereinafter more fully described, and a shield to protect the operator from getting wet.

In the drawings herewith accompanying and making a part of this application, Figure 1 is a longitudinal section of a pump nozzle and shield. Fig. 2 is a detail in section showing one method of attaching nozzle to the spout. Fig. 3 is a cross-section of the nozzle. Fig. 4 is a detail in section showing adjustable nozzle, and Fig. 5 is a detail showing conical sprayer.

The same letters refer to like parts.

In the drawings, *a* represents a pump-barrel, *b* a plunger, and *c* a spout having an opening *e* into said barrel below the plunger. In the bottom of the barrel is the inlet-valve *d*, and at the side the outlet-valve *f*. Near the head of the barrel is an opening *h*, through which the waste water that gets above the plunger-head may escape. Attached to the barrel and the spout by its ends and just above the vent-hole *h* is a shield *i*, the sides of which extend down sufficiently far to turn the waste water downward and into the tub or well in which the pump rests, and thus preventing the operator from being wet by the waste water. At the end of the spout is a nozzle having a tubular portion *k*, the diameter of which, beginning at a given point, increases at a uniform rate to the end. In the end of the nozzle and attached to the inside thereof by a narrow supporting-strip of metal *m* is set a cone, the point extending inward, the said cone having its sides parallel with the sides of the enlarged end of the tube *k*, and at a greater or less distance therefrom, thus leaving a small annular opening for the passage of the water. In order that there may be as little obstruction as possible to the passage of the water, the attaching-strip *m* should be of the same thickness throughout and as narrow as possible and arranged parallel with the direction of the water as it passes out over the face of the cone. If one stay is insufficient to hold the cone, another having the same characteristics may be added.

In order that the amount of delivery may be varied as desired, the arrangement shown in Figs. 4 and 5 may be adopted. This consists in having the cone *l* firmly attached to one or more supporting-strips *o*, which are attached to the inside of the tube *k*, the cone projecting out of the end of the tube, as seen in Fig. 4. Then a sleeve *p*, having its outer end flaring at the same angle as the faces of the cone and the inner end having its sides parallel, is adapted to be moved back and forth upon the end of the tube *k*. By this arrangement of the sleeve, the cone being fixed in the tube, the annular space *q* between the cone and the sleeve can be varied at will by changing the position of the sleeve upon the tube, which can be done without stopping the flow of water or wetting the hands by putting them in the stream, as the sleeve is upon the outside of the tube and to the rear of the water. By this arrangement of the several parts the water is spread out evenly over the cone, and is given a divergent direction by passing under pressure through the inclined annular opening sufficient to cause it sooner or later to separate and fall in fine spray. By the arrangement of the cone and the supporting-stays the obstruction to the free passage of the water is reduced as much as possible, and by making the nozzle, cone, and supporting-pieces out of thin material—as tin or galvanized iron—the pump or sprinkler is light and portable and can be manufactured very cheaply, both of which are very desirable features in this class of devices.

Having thus described my invention and its use, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In a force-sprinkler, the combination,

with the barrel, the plunger, and a tube or spout, of a nozzle secured to the end of the spout, the outer end of which is flaring, and a cone rigidly secured within the flanged portion of the nozzle by means of a thin metallic strip of the same thickness throughout, and having its greatest width in a line with the current of water, one edge of the strip being secured to the surface of the cone and the other edge being secured to the nozzle, whereby the apex of the cone is concentric with the nozzle and the water is deflected equally in all directions from the nozzle, substantially as described.

2. In a force-sprinkler, the combination, with the barrel, the plunger, and a tube or spout, of a nozzle secured to the end of the spout, a cone rigidly secured in the end of the nozzle by means of thin metallic strips of substantially the same thickness throughout, and having their greatest width in a line with the current of water, said strips being secured directly to the surface of the cone and to the tube, whereby the apex of the cone is concentric with the tube and the current of water is deflected equally in all directions, and a sleeve upon the tube, the outer end of which is flaring and can be moved back and forth in relation to the cone, substantially as described.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

ALEXANDER SPEIRS.

Witnesses:
ELGIN C. VERRILL,
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