

No. 637,687.

Patented Nov. 21, 1899.

L. A. WESTON.
AUTOMATIC FIRE SPRINKLER.

(Application filed Mar. 30, 1899.)

(No Model.)

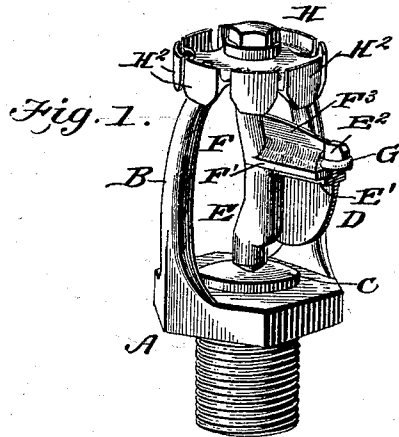


Fig. 2.

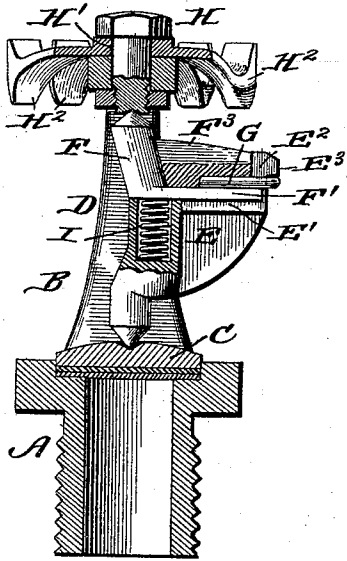


Fig. 3.

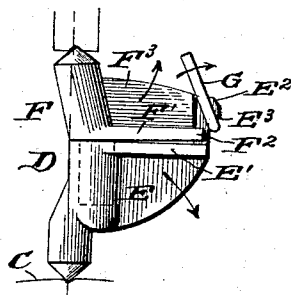


Fig. 4.

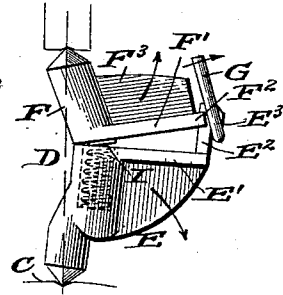


Fig. 5.

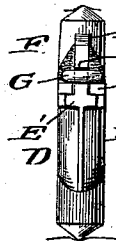


Fig. 6.

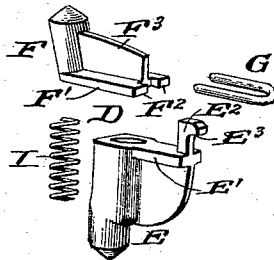
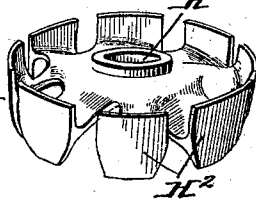


Fig. 7.



WITNESSES:

M. S. Randall
J. S. Hitt

INVENTOR

Leroy A. Weston.

BY *Munn & Co.*

ATTORNEYS.

UNITED STATES PATENT OFFICE.

LEROY A. WESTON, OF ADAMS, MASSACHUSETTS.

AUTOMATIC FIRE-SPRINKLER.

SPECIFICATION forming part of Letters Patent No. 637,687, dated November 21, 1899.

Application filed March 30, 1899; Serial No. 711,109. (No model.)

To all whom it may concern:

Be it known that I, LEROY A. WESTON, of Adams, in the county of Berkshire and State of Massachusetts, have invented a new and useful Improvement in Automatic Fire-Sprinklers, of which the following is a specification.

My invention relates to that class of fire sprinklers or extinguishers in which a system of water-pipes is laid along the walls or ceiling of the room to be protected, the pipes having at desired intervals openings closed by a valve held to its seat by a support made in sections held together by a fusible joint, so that when the temperature of the room becomes dangerously high the joint will fuse, causing the separation of the sections of the valve-support and the consequent outlet of water through the valve.

The object of the invention is to produce an improved valve-support to be used in this class of fire-sprinklers; and the invention consists in certain details of construction and arrangement of the sections of the support which I shall first describe and then point out the novel features in the appended claims.

Reference is to be had to the accompanying drawings, in which like characters of reference indicate corresponding parts in all the views.

Figure 1 is a perspective view showing my improved valve-support in place in the nozzle. Fig. 2 is a sectional side elevation of the same. Figs. 3 and 4 illustrate the operation of the valve-support when the fusible metal has fused. Fig. 5 is an edge view of the support. Fig. 6 is a detail perspective view of the parts of the valve-support, and Fig. 7 is a detail perspective view of the spreader.

The sprinkler is provided with a nozzle A of any preferred construction, the said nozzle being formed for attachment to a water-supply pipe and having a yoke-frame B formed in its base with a valve-seat for the valve C, and at its opposite side with a screw-adjusted seat for one of the bearing-points of a valve-support section. To maintain the valve on its seat until the heat of the room demands that it be released, I provide the valve-support D, made in two sections E F, adapted to normally rest one on top of the other with the usual bearing-points seated in a recess in the upper face of the valve and the recess in the opposite side of the yoke-frame. To this end

the section E is provided with an upper flat face E', on which the corresponding lower face F' of the other section F rests, the rear edges of these faces terminating before they come into alinement with the two bearing-points, whereby the sections will have a tendency to tilt one on the other when pressure is brought to bear on the valve. To prevent the tilting until it becomes advisable or necessary, the section E is provided at its front edge with an upward extension E² above its upper face, the said extension being formed with a hook E³ at its upper outer end, and the section F has a forked forward end F² straddling the extension E². The section F is further provided with a perpendicular flange F³, whose forward edge rises immediately in the rear of the hook extension E², and the said flange extends rearwardly and joins the normally-upright part of the section. A U-shaped restraining-key G is adapted to embrace with its parallel arms the sides of the extension E² and flange F³, the said arms lying upon the normally-horizontal upper face of the section F and the cross bar or head of the key is caught under the hook E³, as shown in Fig. 2. Solder or other fusible metal is then poured around the flange F³, the parallel arms of the restraining-key, and the adjacent sides of the section F, thereby holding the parts normally in place. When the fusible metal has melted and the restraining-key G is released, the pressure in the pipes will cause the sections to tilt on their rear edges and the key itself will also tilt about the hook as a pivot, the key at one stage of the movement of the parts assuming the position shown in Fig. 4, when it will be seen the forked end of the section F can readily clear itself of the extension E² and the sections will fall apart and release the valve.

It will be noted that the lower face of the section F projects beyond the upper face of the section E on both sides, thereby permitting the heat to be conducted more readily to the solder or the like and rendering the device more sensitive.

The sprinkler H used in connection with my device, as shown in Fig. 7, is cast of one piece of suitable metal provided with a central opening H' and a series of concentrically-arranged upright teeth H², spaced from each other.

I preferably make the normally-upright arm of the section E hollow, as shown in Fig. 2, and inclose a coiled spring I therein, the spring being compressed by the section F when the latter is in place. By means of the spring I am enabled to insure a perfect working of the device no matter how small a head of water is bearing on the valve, as the spring is positive in operation and by reason of its being inclosed in the hollow arm is entirely free from being affected by atmospheric changes.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In an automatic fire-sprinkler, the combination with the nozzle having a valve-seat, and a valve adapted to rest on said seat, of a valve-support formed in sections provided with normally-abutting faces and bearing-points out of alinement with such faces, one of said sections being formed at its forward end with an extension above its abutting face and having a hook at the upper outer end of said extension, and the other section being provided with a forked forward end straddling said extension below the hook, and a U-shaped restraining-key extending with its parallel arms on each side of said extension and on top of the last-named section, being held in place by fusible metal, the cross bar or head of said key being caught under the hook, as and for the purpose set forth.

2. The combination with the nozzle having a valve-seat, and a valve adapted to rest on said seat, of a valve-support consisting of an upper section provided with a forked forward end and a lower section supporting said upper section and having a hook extending upwardly through and above said forked end, and a restraining-key extending over and resting upon the upper face of the upper section and being caught under said hook, the

said key being held in place by fusible metal, as and for the purpose set forth.

3. The combination with the nozzle provided with a valve-seat, and a valve adapted to rest on said seat, of a support for the valve, the said support consisting of a lower section having a normally-horizontal upper face and an extension at its forward end rising above said upper face and formed with a hook, an upper section having a lower face arranged to rest upon the said upper face and having its forward end forked and straddling the said extension, the lower face of the upper section projecting beyond the upper face of the lower section on both sides thereof, and a U-shaped restraining-key embracing said extension with its parallel arms and extending above and in contact with the upper section whereby to hold it in place, being itself held in place by fusible metal, and the head or cross bar of said key being caught under said hook, as and for the purpose set forth.

4. The combination with the nozzle, having a valve-seat, and a valve thereon, of the support for the valve, said support consisting of a lower section having a hollow arm, an upper face, and a hook extension above said upper face, a coiled spring in said hollow arm, and upper section supported on said upper face and compressing the spring when so supported, the said upper section having a forked forward end arranged to straddle said hook extension below the hook on the same, and a restraining-key extending over the forked end and in contact with the same, the said key being caught under said hook, and being held normally in place by fusible metal, as and for the purpose set forth.

LEROY A. WESTON.

Witnesses:

AUGUSTUS P. HOLAHAN,
CHARLES HISER.