(No Model.)

O. PIERCE.

AUTOMATIC SPRINKLER HEAD.

No. 519,846. Patented May 15, 1894.

Fig 1.

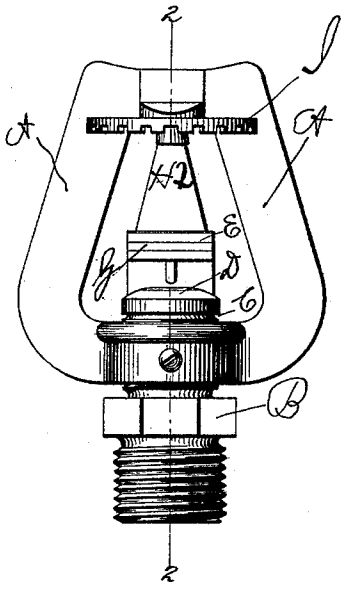
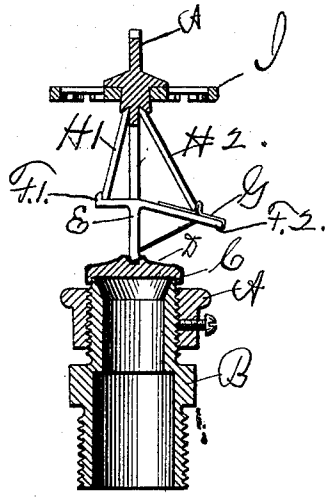


Fig 2.



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AUTOMATIC SPRINKLER-HEAD.

SPECIFICATION forming part of Letters Patent No. 519,846, dated May 15, 1894.

Application filed June 16, 1893. Serial No. 477,881. (No model.)

To all whom it may concern:

Be it known that I, OCTAVIUS PIERCE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Automatic Sprinkler-Heads, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates particularly to automatic sprinklers for fire extinguishing systems, and the invention consists in the simple and novel manner for holding the sprinkler closed, which is automatically opened by excessive heat when the water from the supply pipes is thrown on the fire, as is accurately described in the following specification.

In the accompanying drawings Figure 1. shows the head before it is used by excessive heat. Fig. 2. is a sectional view of the head, showing arrangement of braces and post.

"A" is the frame holding the fusible strut and the deflector and screwed to the lower part of the head.

"B" is the lower part of the head or nozzle through which the water passes from the supply pipe.

"C" is the valve seat.

"D" is a cap to close the valve by being pressed down on the valve seat.

"E" is a post resting on top of the valve cap provided with two outwardly extending arms "F′," "F²," one being much shorter than the other and one extending out at right angles and the other sloping downward, the valve cap having a small nipple extending up in the post to act as a guide and to keep the post from slipping off.

"G" is a piece of thin copper soldered to the sloping arm "F²" of the post "E" by a fusible or soft solder, and acts as a foot rest for the diagonal bar "H²."

"H′" "H²" are two diagonal bars resting on the arms of post "E," one being held in place by a proper recess for holding it, and the other being held in place by the copper disk "G." The upper ends of these diagonal braces are held by the frame "A," there being a proper recess for holding them.

"I" is a deflector for spraying the water as it escapes from the mouth of the nozzle and through the same on the fire.

The diagonal braces are arranged on the opposite sides of the axial line of the nozzle, "H²" being the farthest from the center, so that when the tension is placed on them the brace "H′" has the greatest strain so that the strain on the foot rest for the brace "H²" is very slight. This copper piece "G" is soldered to the arm of the post "E" by soft solder, and the object is to have as little strain as possible on the solder, which owing to its fusing at less than 200°, is very weak.

In practice the parts being arranged and constructed substantially as shown and described, it will be seen by screwing the frame "A" on the nozzle, it will lessen the distance from the nozzle to the top of said frame; now if the post "E" and the two braces "H′" and "H²" are in place, then any required pressure can be had on the valve cap "D" to securely close the valve against any pressure in the supply pipe; a portion of the pressure or tension is thrown against the copper piece "G," thus in case of a fire the heat will unsolder said piece "G," and by this means let the brace copper piece "G." and "H²" slide down the inclined arm of the post. This brace being liberated the brace "H′" cannot hold the valve closed as it is not in a vertical line of the post "E."

The two braces "H′" and "H²" hold the valve closed by lateral displacement and form a rigid strut when the head is under tension and when the brace "H²" is liberated the entire strut collapses and falls to pieces, thus allowing the valve cap to open and be blown off by any pressure in the supply pipe "E."

In this invention I have aimed to reduce the strain on the solder joint, and accomplish this by the means of throwing the greatest strain on the short brace. I have also accomplished another advantage by placing the brace "H²" on top of the copper cap "G," so that when this is melted loose from the post "E" it will allow the copper cap "G" to slide down the arm of the post "E," and will carry with it the brace "H²" and effectually remove it so as to cause no obstruction to the valve cap being blown off.

I claim—

1. In an automatic sprinkler the combination with the nozzle and the frame secured thereto, of the valve cap seated on the nozzle and the post bearing in the center of the cap

provided with the outwardly extending arms, one of which is inclined and longer than the other so as to throw the greatest strain on the shorter arm, and a metal piece secured to said post by fusible solder on the inclined arm of the post and the two outwardly inclined braces of unequal length interposed between the top of the frame and the post, substantially as described.

2. In an automatic sprinkler head the combination with the valve, cap, and frame, of the post bearing on said cap and provided with two outwardly extending arms, one longer than the other, two outwardly inclined braces of unequal length, one resting on the short arm of the post and the other on the copper cap "G;" said copper cap being soldered to the long arm of the post arranged and constructed so as to throw the greatest strain on the shorter arm, and arranged so as to form a rigid strut from the valve cap to the top of the frame, substantially as described.

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Witnesses:
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