

No. 770,753.

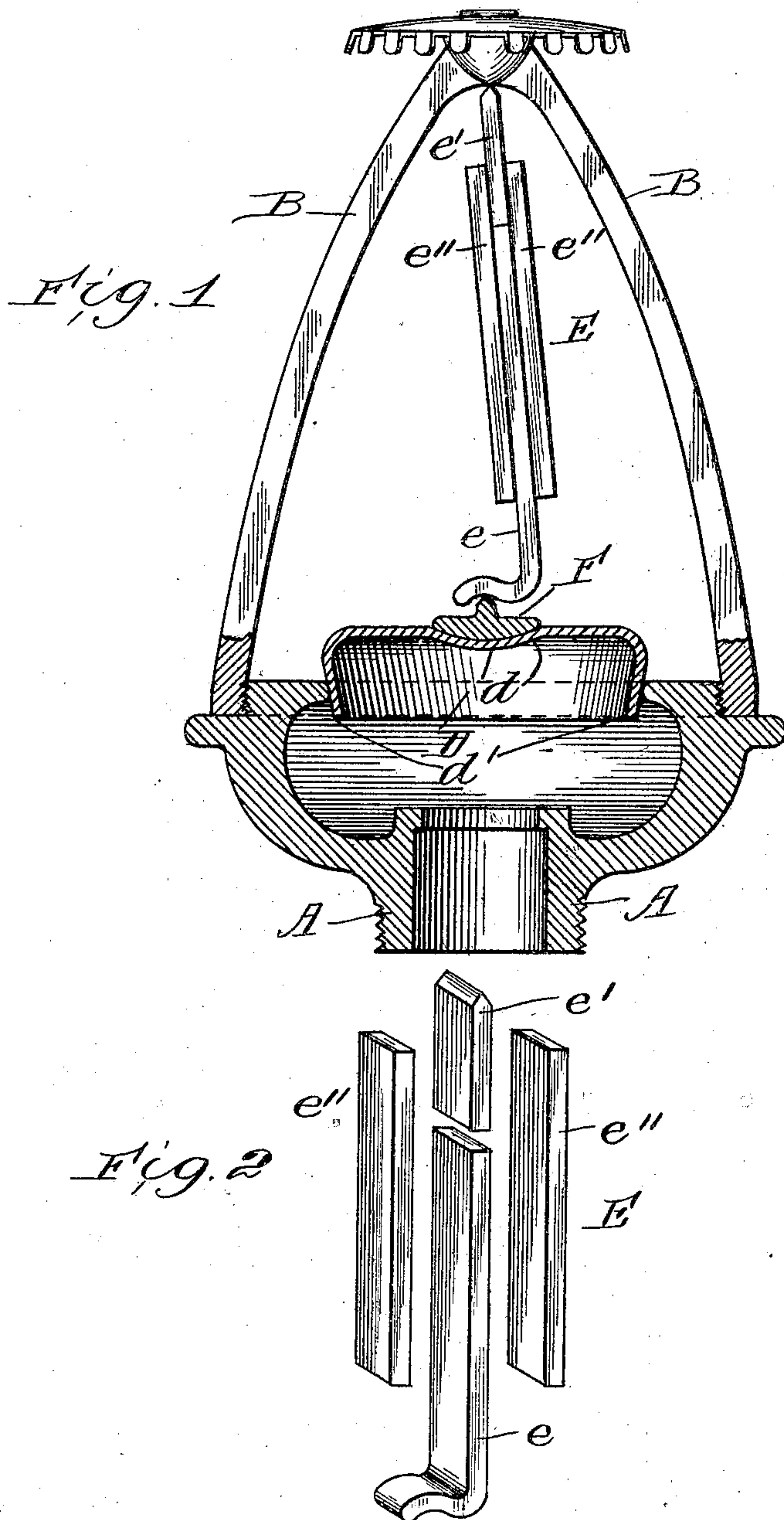
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J. HUNT.

SPRINKLER HEAD FOR AUTOMATIC FIRE EXTINGUISHERS.

APPLICATION FILED JAN. 11, 1904.

NO MODEL.



Witnesses:
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UNITED STATES PATENT OFFICE.

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SPRINKLER-HEAD FOR AUTOMATIC FIRE-EXTINGUISHERS.

SPECIFICATION forming part of Letters Patent No. 770,753, dated September 27, 1904.

Application filed January 11, 1904. Serial No. 188,497. (No model.)

To all whom it may concern:

Be it known that I, JARVIS HUNT, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have
 5 invented certain new and useful Improvements in Sprinkler-Heads for Automatic Fire-Extinguishers, of which the following is a specification.

The present invention relates more particularly to sprinkler-heads that have valve-holding devices technically known in the art as "struts," but one part of it is applicable to
 10 sprinkler-heads generally, without regard to the character of the valve-holding devices.

The objects and advantages of the invention will appear hereinafter.

In order that it may be fully understood, I will describe it with reference to the accompanying drawings, which are made a part hereof, and in which—
 20 of, and in which—

Figure 1 is a sectional elevation of a sprinkler-head embodying the invention. Fig. 2 is a perspective view of the several component parts of the strut separated.

A represents the nozzle, B the yoke or frame, and C the deflector, all of which may be of any desired construction.
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The invention relates in part to the cap or valve D and in part to the strut E. These separate parts of the invention may be used independently—that is to say, a cap or valve of the improved construction may be used in connection with a strut or valve-holding device differing in construction from the one
 30 shown in the drawings, and the valve-holding device shown in the drawings may be used in connection with a cap or valve differing from the one shown in the drawings.

The cap or valve consists of a cellular body
 40 made of elastic metal and comprises a diaphragm *d* and an annular flange *d'*, which tapers to a greater or less extent and projects into the nozzle A, which is provided at its mouth with a seat therefor, the seat being
 45 here shown as formed at the juncture of the end of the nozzle and the inner surface of the cylindrical bore thereof. The cap projects in both directions from its seat, both inward and

outward, so that pressure upon its top or diaphragm will force it into the nozzle until it is
 50 firmly seated, after which continued pressure will cause that portion which protrudes to bulge or spread outward, and thereby tighten the joint. On the other hand, when the pressure is suddenly removed the elasticity of the
 55 cap will cause it to snap or spring back into its original shape and in doing so will effectually dislodge it from its seat, breaking away any corrosion or foreign substance that may have accumulated at the joint. The valve-
 60 holding device bears upon this cap or valve through the medium of a rigid (preferably cast metal) plate F, so that there is no tendency to buckle the diaphragm *d*. The pressure of the air or water, as the case may be,
 65 within the cellular cap or valve will of course expand it to a greater or less extent, depending upon the amount of the pressure and the elasticity of the metal of which the cap or valve is made. It is the intention to seat the
 70 valve originally with sufficient firmness to avoid leakage, either of air or water, after which any increase in the pressure in the system will have a tendency to tighten rather than loosen the joint between the cap or valve
 75 and the nozzle. This is because of the fact that an increase in the pressure will expand the side walls of the cap or valve laterally and force them into more intimate contact with the nozzle.
 80

The strut is constructed of an L-shaped lever *e*, the short arm of which bears upon the plate F and the long arm of which bears upon the yoke B through the medium of a post *e'*, which is shorter than the long arm of the
 85 lever. The long arm of the lever and the post *e'* are in alinement; but the point of contact between the short arm of the lever and the plate F is such that the line of thrust, considering the strut as a whole, is oblique
 90 with respect to the long arm of the lever. The result of this is of course that when unrestrained the endwise pressure upon the post and lever will cause them to move laterally and release the cap or valve. For the purpose of holding them in alinement plates *e''*
 95

are placed upon opposite sides of them, so as to break the joint, the several parts being secured together by solder fusible at a predetermined temperature.

5 I am aware that it is not new to construct a strut of two posts arranged end to end, either in alinement or at an angle to each other, and two plates breaking the joint between the posts aforesaid and soldered to
10 them; but I am not aware that a lever having an offset bearing has ever been used in this manner.

What I claim as new, and desire to secure by Letters Patent, is—

15 1. In a sprinkler-head, the combination of a nozzle having a valve-seat, a cellular cap having tapering elastic sides engaging the seat and extending outward therefrom, and a valve-holding device adapted to exert pressure on
20 the cap, substantially as described.

2. In a sprinkler-head the combination of a nozzle having a valve-seat, a cellular cap having tapering elastic sides engaging the seat and extending in both directions—both in-
25 ward and outward—therefrom and a valve-holding device adapted to exert pressure on the cap, substantially as described.

3. In a sprinkler-head, the combination of a

nozzle having a valve-seat, a cellular cap comprising an elastic top or diaphragm and taper- 30 ing elastic side walls engaging the seat and extending outward therefrom, a rigid plate seated upon the top or diaphragm of the cap, a strut bearing at one end against said plate and a yoke against which the other end of 35 said strut bears, substantially as described.

4. In a sprinkler-head, the combination of a nozzle, a yoke supported by the nozzle, a cap adapted to close the nozzle, and a two-part strut interposed between the cap and yoke, said 40 strut consisting of an L-shaped lever having a long arm and a short arm, the short arm bearing against the cap, a post, shorter than the long arm of the lever, disposed in aline- 45 ment therewith and bearing at one end against the end of said long arm and at the other end against the yoke, and plates arranged upon opposite sides of the post and long arm of the lever and breaking the joint between them, the several parts being secured together by 50 solder, substantially as described.

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Witnesses:

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