W. W. HAWKINS.

SPRINKLER HEAD.

APPLICATION FILED DEC. 6, 1913.

1,115,930.

Patented Nov. 3, 1914.

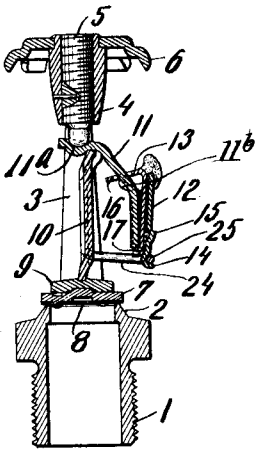


FIG. 2.

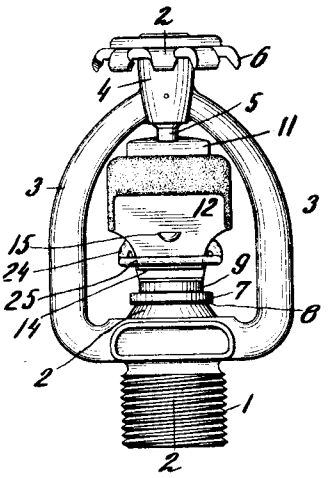


FIG. 1.

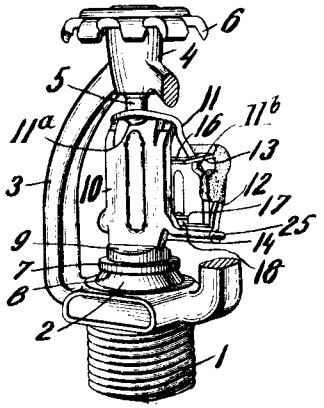


FIG. 3.

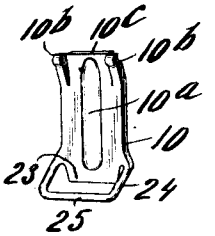


FIG. 4.

Witnesses

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UNITED STATES PATENT OFFICE.

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SPRINKLER-HEAD.

1,115,930. Specification of Letters Patent. Patented Nov. 3, 1914.

Application filed December 8, 1913. Serial No. 805,038.

To all whom it may concern:

Be it known that I, WILLIAM W. HAWKINS, a citizen of the United States, and residing at Norwood, in the county of Hamilton and State of Ohio, have invented a new and Improved Sprinkler-Head, of which the following specification is a full disclosure.

My invention relates to an improvement in sprinkler heads for use in connection with automatic fire extinguisher systems, and which are primarily of a character and type as disclosed in the patent to Charles B. Garrett No. 1,013,545, dated Jan. 2, 1912, wherein a strut structure, unitarily comprised of a series of elements, is employed for securing the nozzle cap in its normally closed position. The improvement herein is principally directed to the strut structure, and has for its object to provide for a reduction in the number of parts to facilitate the manufacture and assemblage, and increase its efficiency and reliability.

Other objects will be in part obvious from the annexed drawings, and in part indicated in connection therewith by the following analysis of the invention.

The invention accordingly consists in the features of construction, combination of parts and arrangement of elements deducible therefrom, and in the unique relation of the members.

To enable others skilled in the art so fully to comprehend the underlying features thereof that they may embody the same by numerous modifications in structure contemplated by this invention, drawings depicting a preferrred form have been annexed as a part of this disclosure, and in such drawings, like characters of reference denote corresponding parts throughout all the views of which:—

Figure 1 is a front elevation of the sprinkler-head in its normally assembled position. Fig. 2 is a section on line 2—2 Fig. 1. Fig. 3 is a perspective view of the head, with portions broken away for more clearly illustrating the features to which my invention is primarily directed. Fig. 4 is a perspective view of the part defined as a compression member.

In the drawings, the numeral 1 indicates the nozzle which is adapted to be secured in the usual way to the pipe fittings of the fire extinguisher installation. The upper end of this nozzle 1, terminates in a raised annular cap seat or flange 2, and is further provided with a yoke or arch 3 that supports a hub 4 at its upper portion; an abutment screw 5 is screwed axially through the hub 4 and projected below the same. A spraying head or distributer 6 is secured to the upper portion of the hub 4 and projects beyond the same.

The orifice or water-discharge passage of the cap seat 2 is normally closed by a cap 7, preferably of bronze, and between which and the said seat a thin copper gasket is interposed. A compression block 9 is seated upon the cap 7, having on its upper face a diametrically extended groove that affords a seat for the lower end of the strut, presently to be described.

The parts 7, 8 and 9 are held together, and the gasket 8 is tightly pressed onto the sharp upper edge of the cap seat 2 by a toggle acting strut structure. This strut structure herein is possessed of the features in common as a unit as that of said aforesaid Garrett patent or analogous types of sprinkler head, in having the general components of a compression member and a lever member, with the differentiating features comprised in the means for retaining the free or long end of the lever toward the compression member, as contradistinguished from the locking device in the aforesaid patent and analogous types of sprinkler heads.

The constructions of the compression member and lever member are identified with salient features in general not novel with me, except as hereinafter exemplified, and in so far as they relate to the combination of elements of the strut structure as a unit. Reference herein is made to a preferred form of toggle-acting strut, as illustrated, comprising a compression member 10 and a lever 11. The compression or strut member 10 at its lower end is seated in the groove of the compression block 9, and its shank portion is preferably stiffened by a longitudinal corrugation 10^a and at its upper end is formed with the spring prongs 10^b that are bent laterally away from its intermediate upper end portion 10^c. The said end 10^c and the ends of the spring prongs 10^b, engage a slightly curved seat formed in the bend of the lever 11, which lever at its short upper end projects beyond the upper end of said compression member,

and is provided with a depression 11^a, in which the lower end of the abutment screw 5 is seated. The long end of the lever 11 is provided with a fusible link, including a front release piece 12, and a back release piece 13. The front piece 12 at its lower edge is provided with a concave flange or portion 14, at its sides with back-turned lips, and at its central portion with a bulge stop-lug 15, which latter is provided for convenience in assemblage. The back piece 13, at its upper edge, is formed with a rearwardly turned flange 16, having a long transverse slot through which the lever is adapted to be inserted. At its lower edge said element 13 is provided with a backwardly bent lip 17, and at its sides with backwardly bent lips. When the two elements 12 and 13 are assembled, solder or fusible metal is interposed between them to rigidly unite the same.

The lever 11 is engaged through the slot in the flange 16 of the upper end of the back piece 13 of the fusible link. The lever 11 at its sides is provided with stops or lugs 11^b that engage the flange 16 of the back piece 13. At its extreme lower end the lever 11 is formed with a notch 18 that embraces the lip of said back release piece 13.

The fusible link is flexibly interlocked to the lever, so that both the lever and the link are relieved from torsional strains.

The strut structure retaining means, comprises a clevis loop integrally projected from the strut member 10 to clasp the free end of the lever 11. The strut is a stamping integrally formed from an approximately rectangular blank, apertured at one end to provide a blunt edge blade 23 at the base of the shank portion and the clevis loop 24. The clevis loop engages with the hook end of the front release piece 12 of the lever, lockingly binding the lever to the shank of the strut. The clevis loop is preferably provided with a straight-bar portion 25 which is engaged by the lever, or front release piece as a fusible separate element, which bar serves as an axis or fulcrum when the parts of the lever separate, aiding materially the projected collapse of the parts required in the functioning of an approved sprinkler head. This integrally formed clevis element of the compression member reduces the number of parts, the expense of manufacture and materially facilitates the assemblage of the sprinkler head.

Having thus described my invention, I claim as new and desire to secure by Letters Patent of the United States:—

1. A strut member for automatic sprinkler heads stamped from an approximately rectangular blank, providing a shank portion apertured at one end to form a clevis loop, laterally bent, the opposite end of the shank portion slitted coincidently with its longitudinal margins and the central portion of the shank longitudinally corrugated to provide flexible and reinforced inflexible portions.

2. A strut member for automatic sprinkler heads, formed from an integral blank, apertured at one end to provide a clevis loop, and a blunt edge blade when said loop is bent laterally thereto.

3. A strut member for sprinkler heads, integrally comprising a rigid shank portion having a blunt edge blade at one end and a clevis loop at said end projected laterally.

4. A strut member for sprinkler heads integrally comprising a reinforced non-flexible shank portion having at one end flexible margin portions, and its opposite end formed into a blunt edge blade and a clevis loop projected therefrom intermediate of the ends.

In witness whereof, I hereunto subscribe my name, as attested by the two subscribing witnesses.

WILLIAM W. HAWKINS.

Witnesses:
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WILLIAM F. RITZ