This invention relates to improvements in automatic sprinkler heads for sprinkling systems, and particularly to the means here- 
5 
tofore employed for securing their tension- 
screw in its adjusted position.

As a means for preventing attempted re-
5 
pairs in sprinkler heads and their further 
use after having been once operatively dis-
9 assembled, the Board of Laboratory Under-
writers of the City of Chicago and the As-
14 sociated Factory of Mutual Laboratories, of 
Boston, have heretofore required as a con-
19 dition precedent to the use of such sprinkler 
heads, that, following their assemblage and 
24 the final adjustment of tension-screw, a 
perforation be bored through one wall, 
29 thence through the tension-screw and into 
the opposing wall of the support for the ten-
34 sion-screw, and a pin be driven therein for 
holding the screw in its tensioned position.

In practice, however, the use of a pin so 
39 located has not been satisfactory for the 
reason that the pin is accessible for being 
44 pulled, bored or else jolted out, as not in-
49 frequently happens.

The prime object of my invention broadly 
54 stated, is to provide an automatic sprinkler 
head with a simple and effective means 
59 permanently locking the tension-screw in its 
64 adjusted position.

More specifically stated, the object of my 
69 invention is an automatic sprinkler head, 
74 the adjusted tension-screw of which is per-
79 manently and inaccessible locked in its op-
84 erative position by means of metal displaced 
89 from the tension-screw support.

A further object of my invention is an 
94 assembled sprinkler head, the adjusted ten-
99 sion-screw of which is permanently and in-
104 accessible locked in its operative position by 
means of metal displaced from the sprinkler 
109 head support, projecting between and in-
114 wardly beyond the threads of the tension-
119 screw.

With these ends in view, my invention 
124 finds embodiment in certain features of 
129 novelty in the construction, combination and 
134 arrangement of parts by which the said ob-
139 jects and certain other objects are attained, 
144 all as hereinafter fully described with re-
149 ference to the accompanying drawings and 
154 more fully pointed out in the claims.

In said drawings,

Fig. 1 illustrates, in vertical section, an 
159 automatic sprinkler head in which my in-
164 vention finds its embodiment.

Fig. 2 is an enlarged longitudinal section 
170 of the tension-screw and its support; and

Fig. 3 illustrates diagrammatically the 
175 displacement of the screw-threads of the ten-
180 sion-screw and the position of the metal of 
the support forced between the threads of 
185 the tension-screw.

Similar characters of reference indicate the 
190 same parts in the several figures of the 
195 drawing.

In said drawing, 4 indicates a nozzle ex-
200 ternally screw-threaded for connecting it to 
the water supply pipe of a sprinkling sys-
205 tem, which nozzle is provided with a rim 5, 
forming a seat for a cap 6 of any commonly 
210 employed construction, normally closing 
and preventing leakage of the water.

Secured to the nozzle, integrally or other-
215 wise, is the usual yoke 7, provided at its 
 apex with a perforated support 8, upon the 
upper end of which is mounted a deflector 9, 
said support 8 being provided with a screw-
220 threaded perforation 10, located in axial 
alignment with the discharge opening of the 
nozzle, in which perforation is a tension-
screw 11 provided with screw-threads 11* 
for adjusting the tension-screw to compress 
the toggles.

The top cap 6 and the end of the tension-
screw are provided with recesses into which 
are projected toggle joints 12, 12, the upper 
member of the toggle joint being provided 
with a similar recess receiving the lower 
toggle joint, which toggle joints are each 
provided with outwardly projecting levers 
13, 13, terminating at their ends in hooks 14, 
14, for connecting therewith a fusible link 
by means of perforations 16, 16, through 
which the hooks 14, 14 are projected.

The fusible link 15, however, together 
with all other parts and their arrangement 
in the sprinkler head so far described, may 
be of any other form and construction adapt-
ed for the permanent locking of the tension-
screw in its adjusted operative position 
against the possibility of detachment pro-
vided for by my invention now to be de-
scribed.

With this understanding, my invention 
finds its embodiment in an automatic 
105 sprinkler head, the tension-screw of which 
is permanently locked in its adjusted posi-
110 tion by a displaced portion of metal pro-
115 jected and compressed between the threads 
of the adjusting screw, which projected 
metal locks the adjusting screw in its sup-
port and, being inaccessible from without, prevents the possibility of tampering with or moving the screw from its adjusted position in the support.

To these ends, it is now to be noted that the hole 17 indicates the displacement inwardly of the metal of the support by means of a manually or machine-operated punch 18 and the projection of the displaced metal into the threads of the tension-screw with an impact the force of which is sufficient for the projected metal to destroy that portion of the thread of the support opposed thereto to spread the opposing threads 21 and 22 of the tension-screw opposed thereto and, as may be, to project the displaced metal of the support inwardly beyond the threads into the body of the tension-screw, and to compress the diametrically opposing threads of the tension-screw into the threads of the support, more than normally tight, and so tight that they appear to form an integral part thereof.

For carrying out my invention, following the assembling of a fusible link and the required adjustment of the tension-screw for imparting to the toggle joint the desired number of pounds pull against the fusible link, the support is placed upon an anvil or in a punch press, followed by forcibly driving the punch into the support for displacing a sufficient amount of metal, as indicated at 17, and forcing the displaced metal inwardly.

As indicated at 18, the punching force operates to accordingly mutilate the threads at this point in the support, drive the displaced metal between and spread the threads in the tension-screw directly opposed thereto and may be inwardly beyond the threads into the body of the tension-screw and distorting the support, separate the threads of the support from the threads of the tension-screw, as indicated at 21 and 22, and at the same time tightening the intertwining threads of both of these devices, all as clearly shown in Fig. 2.

While Fig. 1 corresponds in size to the full-sized sprinkler head, the support and tension-screw of which are in section, as shown in said drawing, the enlargement in Fig. 2 of the tension-screw and its support more accurately and clearly shows in detail the results attributable to my invention, and furnishes the evidence that a displacement of the metal in the support and the screw-threads in the tension-screw not only permanently locks the tension-screw in its adjustment, but by devices wholly inaccessible at any time and by any means for unlocking them without destroying both the screw and its support, together with the sprinkler head.

It should be particularly noted in a consideration of my invention, that it proposes the inserting of a portion of the material of the support for the purpose which has now been clearly brought out, by means applied to the external surface of the support and the operation of which means, for the stated purpose, results in the formation of an indentation so visible to the eye as to indicate upon the brightest inspection that the operation whereby the tension-screw is locked in the manner and for the purpose set forth, has been accomplished. This greatly facilitates inspection by the Fire Underwriters, and also brings about another advantage in so far as inspection is concerned since the depth of the indentation and thus the extent to which the punch has entered the surface of the support may be readily gaged. Obviously, the material of the support can be inset to more or less temporarily lock the tension screw without the results sought by this invention, or in other words, without securing the tension screw in connection with the support as to prevent their disassociation and re-use. It is an easy matter to establish how deeply the support must be punched or indented to bring the above about, and knowing this required depth, it is a very easy matter upon inspection to determine that the required depth of punching has been accomplished, by gaging the depth of the indentation.

Having described my invention, what I claim and desire to secure by Letters Patent is:

1. A sprinkler head comprising an internal screw-threaded support, a tension screw adapted thereto, said support having a visible external surface indentation resulting in an inserting of a portion of the material thereof, with a consequent mutilation of a portion of the threads of the tension screw sufficient for permanently locking the screw in its adjusted position, thereby preventing the removal of the tension screw without destroying it for future use.

2. The herein described method for inaccessible permanently locking the tension screw in its adjusted position in the support of a sprinkler head and preventing their separation thereafter for subsequent use, the same consisting in first adjusting the tension screw and then in applying to the external surface of the support a punch with sufficient force to mutilate a portion of opposing threads thereof and project the mutilated threads in a body from the support inwardly beyond the screw threaded surface of the tension screw and at the same time form a depression in the external surface of the support by which the extent of the mutilation can be readily gaged.

In witness whereof, I have hereunto set my hand this 10th day of April, 1923.

HARRY M. NACEY.