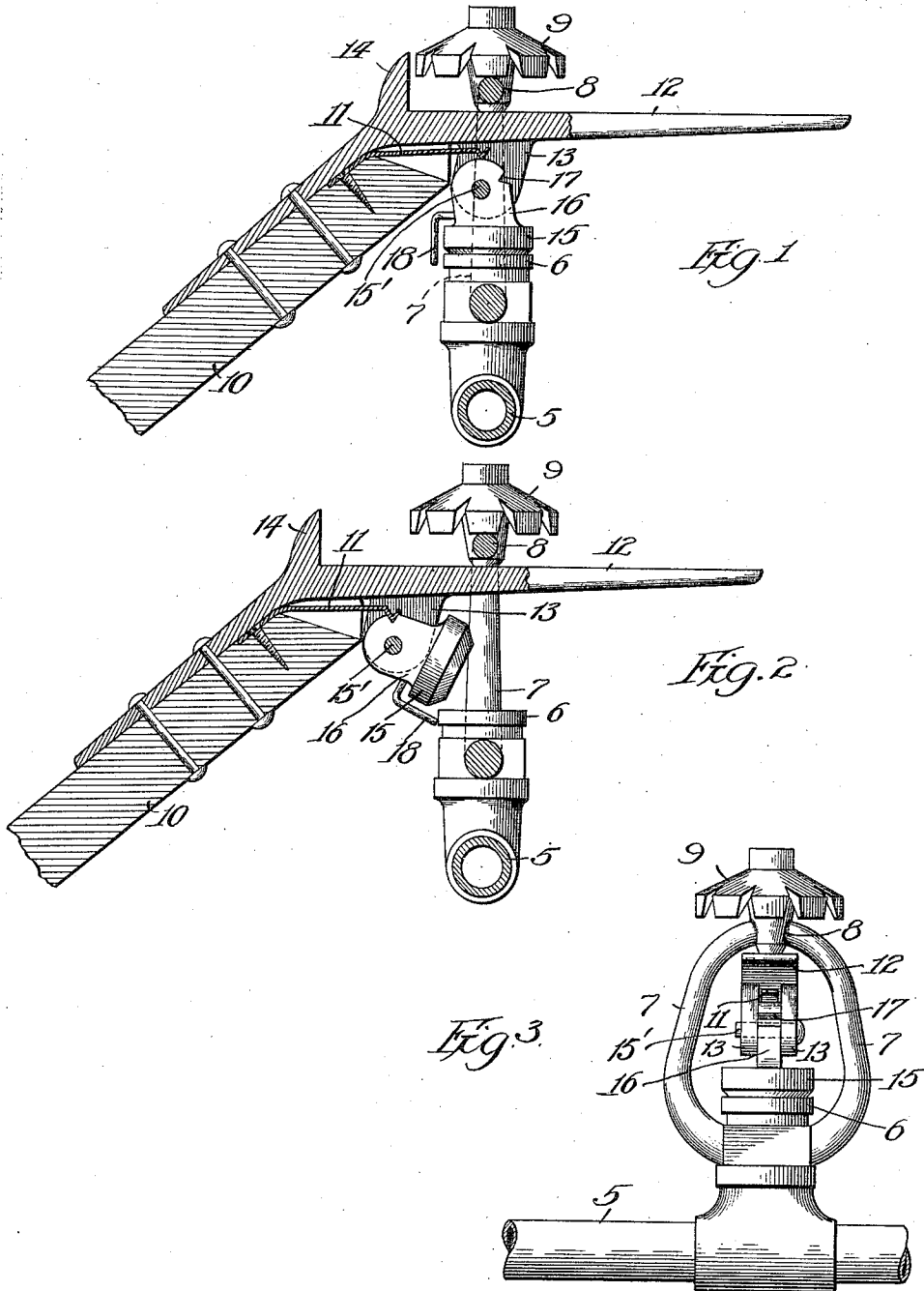


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 SPRINKLER HEAD SHUT-OFF DEVICE.
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UNITED STATES PATENT OFFICE.

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SPRINKLER-HEAD SHUT-OFF DEVICE.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, AUGUST C. SEEGER, of East St. Louis, county of St. Clair, State of Illinois, have invented certain new and useful Improvements in Sprinkler-Head Shut-Off Devices, of which the following is a specification.

This invention relates to stoppers or shut-offs and is designed and particularly adapted to be used in connection with the sprinkler heads or distributors of automatic sprinkler systems.

The two most common types of sprinkler systems at present in use for purposes of fire protection are; the wet system in which the water is constantly stored in the distributing pipes; and the dry system in which the pipes are filled with compressed air as far back as a controlling valve known as an automatic dry pipe valve, which is normally closed but adapted to be released automatically by the diminution of air-pressure in the pipes when a sprinkler head opens, thus admitting water under pressure to the distributing pipes and heads. In both types of systems the accidental opening of a sprinkler head sometimes occurs, due to the giving way of the fusible solder which normally retains the valve in closed position, or to some unusual disturbance of the head which causes the valve to open.

The inaccessibility of the sprinkler heads, they being usually located near the ceiling, and the high pressure under which the water is distributed, have rendered the stoppage of the flow at the head itself, very difficult. Consequently, emergencies of this kind have heretofore necessitated the shutting off of the water supply to the whole system of pipes in order to check the flow through the individual head. In most instances large quantities of water would escape with much ensuing damage before the main supply valve could be reached and closed. I have overcome this heretofore objectionable feature of sprinkler systems by providing a device which can be quickly and easily applied to a sprinkler head to promptly and effectually shut off the water escaping therefrom whenever it becomes necessary or desirable to do so.

It is the purpose of my invention also, to produce a device which can be left in a sprinkler head and which will automatically resist and overcome the water pressure in

the head and maintain the outlet thereof, closed.

Another object is the production of a stopper or shut-off which is adapted to be placed in operative position by a person remaining outside the range of the sprinkler.

A further aim is the provision of a device which will be light in weight, simple in construction and cheap to manufacture, and which can be quickly and effectively applied to a sprinkler head when necessary, by any one unfamiliar with sprinkler systems in general.

To facilitate the explanation of my invention, I have embodied it in a device shown in the accompanying drawings. To the precise construction disclosed, however, I do not wish to be understood as limiting myself, it being obvious that various changes in the size, shape, proportion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings disclosing a preferred embodiment of my invention Figure 1 is an elevation, partly in section, and showing the stopper in seated position. Fig. 2 is a similar view but showing the stopper in normal elevated position. Fig. 3 is an elevation of a sprinkler head with the shut-off applied thereto.

In the drawings I have illustrated an ordinary form of sprinkler head attached to a distributing pipe 5 and comprising a seat provided with an annular shoulder 6, and an upwardly extending frame or yoke 7, terminating in a crown 8, on which is mounted the deflector 9, which may be of any of the well known rotary or stationary types.

In order to provide a shut-off device which can be seated against the pressure of the escaping water, a structure is necessary by means of which considerable force can be applied to the stopper itself, to thrust it against its seat. In the preferred embodiment of my construction for accomplishing this function, I employ a handle 10, which may be of any desired length, but is preferably long enough so that the sprinkler head which is near the ceiling, may be reached with the handle by a person standing on the floor and outside the range of the sprinkler. To one end of said handle there is secured a leaf spring 11, which extends

outwardly at an angle and is provided at its outer end with a V-shaped projection for a purpose to be hereinafter more fully explained. Over the leaf spring 11 there is
 5 secured to the handle, an extension or tongue 12, which projects at an angle to the longitudinal axis of the handle and substantially parallel with the spring 11, and is provided on its lower side adjacent the end of the
 10 handle, with a pair of lugs or ears 13. This tongue or extension, which is preferably gradually tapered toward its outer end, is adapted to be inserted into the frame and to be engaged underneath the crown of the
 15 sprinkler head, and is provided with a shoulder 14, which, by its engagement with the deflector, prevents the insertion of the tongue too far through the sprinkler head frame.

20 Between the depending ears 13 on the extension 12, there is pivotally mounted on a pin 15', a stopper 15 which is adapted to be seated in the orifice or outlet opening of the sprinkler head. The supporting lug 16
 25 by means of which the stopper is mounted, is preferably curved at its upper end and provided with a notch 17 which is adapted to be engaged by the V-shaped end of the leaf-spring 11, to normally retain the stopper in elevated position, as shown in Fig. 2.

30 An outwardly and downwardly extending member 18 spaced from the side of the stopper, is secured to the rear of the supporting lug 16. This member when the stopper is in its normal position, as shown in Fig. 2, is positioned substantially parallel with and below the stopper, and is adapted to engage the shoulder 6 on the sprinkler
 35 seat when the tongue 12 has been inserted a predetermined distance through the frame of the sprinkler head. Further movement of the tongue through the frame will result in turning the stopper upon its bearing, thereby releasing the spring 11 from engagement with the notch 17 and seating the
 40 stopper in the position shown in Fig. 1.

45 When the device has been thrust into the sprinkler head frame until the stopper 15 is seated, as above described, the upper surface of the tongue 12 will bear against the lower face of the crown 8, tending to hold the stopper against its seat. The bearing pin 15' when the stopper is in seated position, as shown in Fig. 1, will be in a position at one side of a line drawn through the bearing face of the crown and the axis
 50 of the stopper, thus providing a toggle-joint. It will be evident that any downward movement of the outer end of the handle 10, will tend to force the stopper more tightly against its seat, and in the usual construction, the weight of the handle 10 is sufficient to cause this toggle action and maintain the stopper seated against the pressure
 55 of the water. If, however, the weight of

the handle itself should be insufficient for this purpose, an additional weight may be attached to the end of the handle, which shall be sufficient to maintain the stopper in seated position.

70 My invention may be employed in factories, stores, warehouses, or in fact any place where automatic sprinkler systems are installed, and when kept in accessible positions can be quickly secured and applied to
 75 an accidentally opened sprinkler head to promptly and effectively shut off the water flow therefrom, thereby preventing the damage which is ordinarily caused by escaping water under such conditions.

80 From the foregoing, it is thought that the construction, operation, and many advantages of the herein described invention, will be apparent to those skilled in the art, without further description, and it will be understood that details which have not been specified may be of any approved description and modification, such as will be required in adapting it to any particular or modified form of sprinkler head.

90 What I claim is:

1. A shut-off device for sprinkler heads, comprising a handle having an extension projecting at an angle from one end thereof, adapted to be inserted beneath the crown of
 95 a sprinkler head, a stopper pivotally mounted on said extension, and means carried on the side of said stopper to position the stopper over the opening in the head, the pivotal connection between the extension and the stopper providing a toggle-joint to force the stopper against its seat under the influence of the weight of the handle.

100 2. A shut-off device for sprinkler heads, having a handle provided with an extension from one end thereof, adapted to be engaged under the crown of a sprinkler head, a stopper pivotally secured to said handle and means for locking the stopper in an elevated position, but adapted to release said stopper when one edge thereof is engaged with its seat, whereupon downward movement of the handle will force the stopper against its seat, substantially as described.

115 3. A shut-off device for sprinkler heads, comprising a handle provided with a tongue projecting at an angle from one end thereof, and adapted to be engaged with the frame of a sprinkler head, a stopper pivotally secured to said tongue, yielding means for locking the stopper in elevated position, and a member secured to said stopper and adapted to be engaged with a shoulder on a sprinkler head to release said stopper from said retaining means, whereupon downward
 120 movement of the handle will force said stopper into seating position against the sprinkler head seat, substantially as described.

125 4. In a shut-off device for sprinkler heads,

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the combination of a handle, a tongue secured to one end thereof, and adapted to be engaged beneath the crown of a sprinkler head, a shoulder on said tongue adapted to abut against the frame of the sprinkler head, to limit the insertion of the tongue beneath the crown, a stopper pivotally secured to said tongue, means for yieldingly retaining said stopper in raised position, and a member on said stopper adapted to be engaged with the sprinkler head to release the stopper from said retaining means, substantially as described.

5. A shut-off device for sprinkler heads, having in combination, a handle, a tongue adapted to enter a sprinkler head frame, a

stopper pivotally secured to said tongue, and normally retained in elevated position, a member attached to one side of said stopper and adapted to engage a shoulder on a sprinkler head to partially turn said stopper on its pivot as the tongue is inserted into the sprinkler head frame, further movement of the tongue acting through the pivotal connection to force the stopper against its seat, the weight of the handle serving to hold it in seated position, substantially as described.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
