

(No Model.)

T. HOLMES.
AUTOMATIC SPRINKLER.

No. 512,030.

Patented Jan. 2, 1894.

Fig. 1.

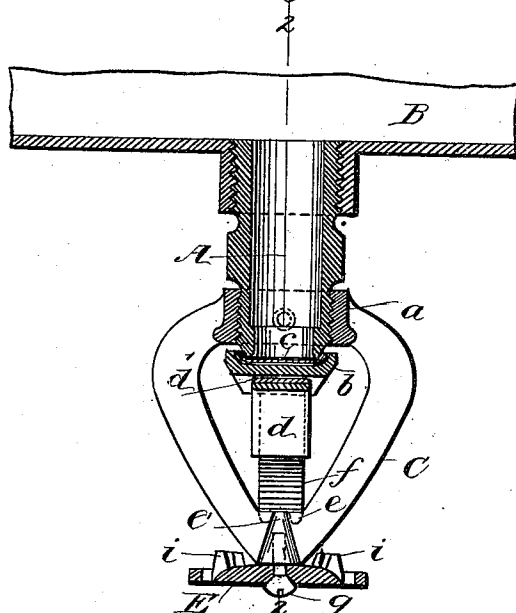


Fig. 2.

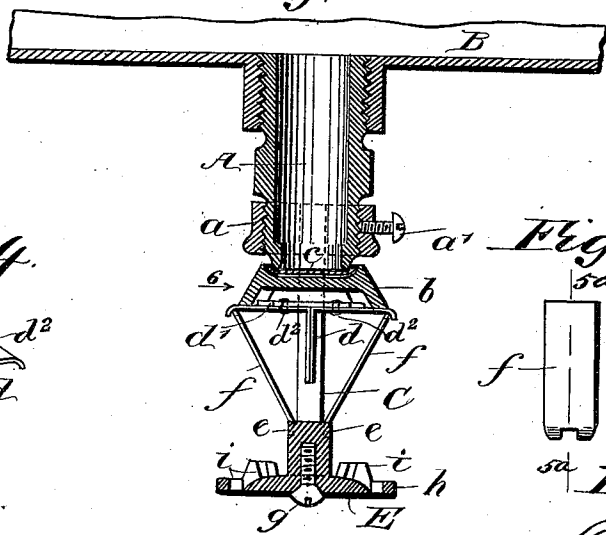


Fig. 4.

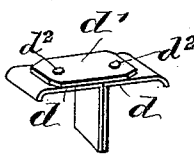


Fig. 5.

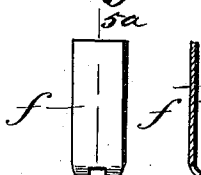


Fig. 5c.

Fig. 6.

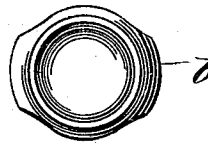
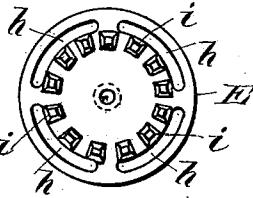


Fig. 3.



WITNESSES:

J. Mc Ardle.
A. Sedgwick

INVENTOR

T. Holmes
BY *Munn & Co*

ATTORNEYS.

UNITED STATES PATENT OFFICE.

THOMAS HOLMES, OF CHICAGO, ILLINOIS.

AUTOMATIC SPRINKLER.

SPECIFICATION forming part of Letters Patent No. 512,030, dated January 2, 1894.

Application filed September 11, 1893. Serial No. 485,235. (No model.)

To all whom it may concern:

Be it known that I, THOMAS HOLMES, of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improved Automatic Sprinkler, of which the following is a full, clear, and exact description.

My invention relates to improvements in fire extinguishing liquid sprinklers, of a class that are set in action by the starting of a fire in the room wherein the device is located and the great increase of heat thus produced.

The objects of my invention are, to provide a novel, simple device of the type mentioned, which will deliver a drenching shower of water from a supply pipe, when sufficient heat is produced by a fire in the room wherein the device is situated, to melt fusible metal joints in the peculiar sealing connection of the device, and thus release the sprinkling mechanism and water seal of the device at the same time.

To these ends, my invention consists in the peculiar construction and combination of parts, as is hereinafter described and claimed.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a partly sectional side view taken through the axis of the device, and a longitudinal sectional view in part of a water supply pipe from which the sprinkler depends. Fig. 2 is an axial sectional view on the line 2—2 in Fig. 1. Fig. 3 is a detached plan view of the water spraying disk, that is a feature of the invention. Fig. 4 is a detached perspective view of a composite prop piece that is part of the improvement. Fig. 5 is a side view of an inclined brace that is an essential adjunct of the improved sprinkler. Fig. 5^a, is a longitudinal sectional view of the part shown in Fig. 5, on the line 5^a—5^a, in said figure; and Fig. 6 is a plan view of the part located opposite arrow 6 in Fig. 2.

In the drawings, A represents a substantially cylindrical shell having flattened places oppositely formed near its longitudinal center to receive a wrench, and on each end portion a screw thread is produced. The normally upper end of the shell A, is designed for a threaded engagement with a water supply pipe B, that

is shown in part in Figs. 1 and 2, but which in complete form is an extension from a water or other liquid supply under pressure, that is to be used as a fire extinguishing agent.

A substantially oval yoke piece C, in ring form, is furnished at its wide upper end with an axially coincident ferrule *a*, that is internally threaded to screw upon the threaded lower end of the shell A, a set screw *a'*; being introduced through the ferrule to secure the yoke at any desired point on the end of the shell. On the lower terminal of the shell, a true seat is formed to receive the slightly dished sealing cap *b*, a suitable joint piece *c*, being introduced between the parts mentioned to insure a joint, and if preferred said joint piece may be of soft sheet metal. The sealing cap is flared on its circular side wall to render it coniform, and is cupped on the lower surface of a proper depth to receive the tie-plate *d'*, of a prop piece that is composed of two similar right-angle bent plates *d*, that have their upright members soldered together with a fusible metal cement, the tie-plate that is imposed on the horizontal members of said parts, being likewise secured in place with a fusible metal solder and two fusible pins *d*². The cap *b*, is oppositely cut away on its side wall to form two limbs, whereon the horizontal members of the plates *d* bear when the several parts of the device are assembled.

At the center of the lower end of the oval yoke C, two narrow bearing points are oppositely formed, as indicated at *e*, in Figs. 1 and 2, which bearings are intended to receive the notched lower ends of the similar brace plates *f*, which are provided in duplicate and extend when in place, upwardly and outwardly, engaging their upper ends with the lower surface of the horizontal members of the prop plates *d*, that have their outer ends curved slightly downward to adapt them for engagement with the plates *f*, and to prevent the latter from accidental displacement. In the flat lower terminal of the yoke C, at its axial center, a threaded perforation is produced, and the exterior of said end is rounded and upwardly converged to produce a conical deflector *e'* for liquid that may be projected from the shell A, upon it as shown in Fig. 1,

or the part e' , may be cylindrically formed as indicated in Fig. 2.

The spraying disk E, comprises a circular plate centrally perforated to receive a screw 5 g , that loosely engages said part with its head and is screwed into the threaded perforation formed in the lower end of the yoke. From the center of the disk E, its upper surface is convexly formed to a point near the rim, and 10 concentric with the center a series of curved slots h , are produced in the disk, leaving a narrow margin stand between their outer edge and the periphery of the disk. Along the inner edge of the slots h , a series of stud-like 15 projections i , are erected in a circular row at even distances apart.

The proportionate size of the described parts is such, that when they are assembled as shown in Figs. 1 and 2, the sealing cap b , 20 will be held closely pressed upon the joint plate c , that intervenes the cap and true lower end of the shell A, so that water or other liquid in the supply pipe B, that freely enters the shell, will be prevented from leaking at 25 the lower end of the latter.

If a fire occurs in a room that is furnished with the improvement in proper numbers, and heat is evolved thereby of a temperature sufficient to melt the fusible metal joints in 30 the prop piece d, d' , it will be seen, that the parts which support the sealing cap b , will yield to the water pressure above, and allow the cap to drop along with the prop pieces and brace plates f , so that a strong downflow 35 of water from the supply pipe B, will impinge the spraying disk E, and be thrown outwardly, the slots in said disk and series of studs i thereon, serving to break up the column of water into a shower of fine streams, that

will extinguish a fire below the same if the 40 water pressure is of sufficient force.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination with a shell securable to 45 a liquid supply, of a yoke piece, a sealing cap, a T-shaped composite prop piece, two inclined braces engaging the yoke and prop-piece, and a spraying disk, substantially as described.

2. The combination with a cylindrical shell, 50 and a securable yoke piece on its lower end, of a sealing cap, a composite T-shaped prop piece the members of which are joined by a fusible solder, two inclined braces notched at 55 their lower ends and engaging the yoke and bent outer ends of the prop piece, and a spraying disk on the lower end of the yoke piece, substantially as described.

3. The combination with a cylindrical shell 60 threaded at each end, and an ovoid yoke piece adjustably secured at the lower end of the shell, of a dished sealing cap, a joint piece between said cap and the true lower end of 65 the shell, a T-shaped prop piece comprising two right-angle bent members and a tie-plate all joined with fusible solder, two inclined braces notched at their lower ends and engaging in the outer bent ends of the prop piece 70 and lower end of the yoke, and a spraying disk having a series of studs on top and concentric slots outside of said studs, substantially as described.

THOS. HOLMES.

Witnesses:

MARK A. FOOTE,
PHILIP A. HOYNE.