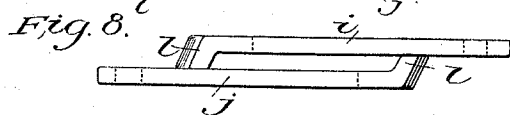
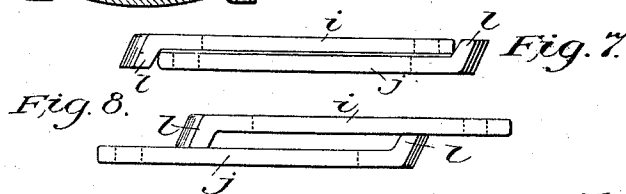
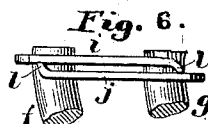
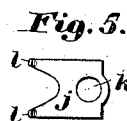
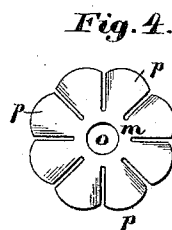
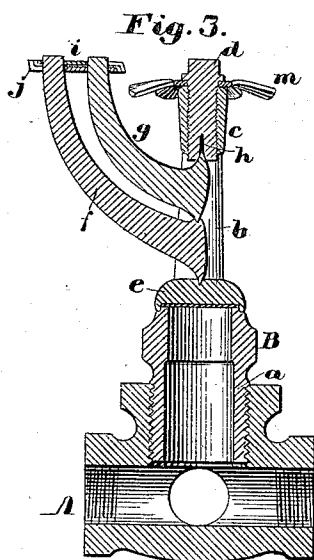
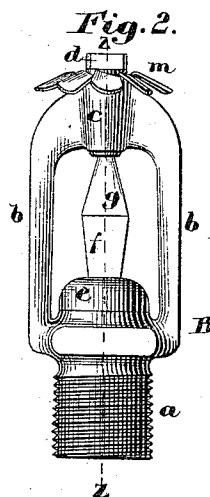
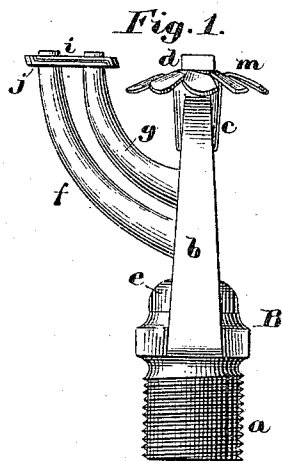


(No Model.)

P. W. SWAN.
AUTOMATIC SPRINKLER.

No. 537,552.

Patented Apr. 16, 1895.



Witnesses:
A. W. Green
M. W. Bruch

Inventor:
Phineas W. Swan
per J. W. Porter Atty.

UNITED STATES PATENT OFFICE.

PHINEAS W. SWAN, OF WINCHESTER, MASSACHUSETTS.

AUTOMATIC SPRINKLER.

SPECIFICATION forming part of Letters Patent No. 537,552, dated April 16, 1895.

Application filed June 28, 1893. Serial No. 479,012. (No model.)

To all whom it may concern:

Be it known that I, PHINEAS W. SWAN, of Winchester, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Automatic Sprinklers, which will, in connection with the accompanying drawings, be hereinafter fully described, and specifically defined in the appended claims.

In said drawings, Figure 1, is a side elevation of my extinguisher. Fig. 2, is a front elevation of the same. Fig. 3, is a vertical central section on line Z, Fig. 2. Fig. 4, is a top plan view of the distributor. Fig. 5, shows in plan view one of the halves of the holding link, and Fig. 6, is an enlarged detached side elevation showing the halves of the link and connected struts as in the act of being separated as the sprinkler is opening. Fig. 7, is an enlarged side elevation of the link, as soldered for holding the extinguisher closed; and Fig. 8 is also an enlarged side elevation of the link shown as when the solder has given way and the link as when the plates move past each other.

The object of my invention is to effect certain improvements upon the sprinkler patented by me on December 20, 1892, No. 488,257, and it will be fully described herein and then pointed out in the appended claims.

Referring again to said drawings, A represents couplings which are at proper intervals interposed in the system of distributing pipes, and to which the sprinklers are attached. The sprinklers are formed with body B, which consists of the sleeve like portion *a*, threaded in coupling B, the upright arms *b* and the hollow boss *c*, said parts being preferably formed as an integral casting. The valve is shown at *e* and as covering the passage through part *a*, that communicates with the water supply. Part *c* is internally screw threaded, and has fitted in it the screw *d*, which at the inner end is slightly countersunk to receive the rounded end of strut *g*, and it is also slotted as shown at *h* by a thin saw kerf that extends laterally entirely through the screw and also extends some distance inward from the bottom of said countersink; so that the pressure of the strut upon the screw will force the halves of such divided end against the

internal wall of part *e* and so hold it from being jarred outwards either by the concussion of machinery or by the "water hammer" that occurs in all pipes subject to a variable static head.

The strut *f* is at its lower end formed wedge shaped to rest in a slight depression in valve *e*, while at the opposite end it is formed with a shallow depression to receive the wedge like end of strut *g*, as in my said former patent.

The securing link is formed of the two metal parts or halves *i* and *j* which are each formed with a hole *k* for securing to the arms of struts *f* and *g*; and said parts of the link are each formed with a curved portion *l* at the end, so that as soon as the link is unsoldered and is moved it will by said curves *l* be forced vertically apart so that resoldering is impossible even though the entire jet of water should strike the link.

Upon screw *d* I arrange a distributor *m*, which I form with a central hole *o* for the screw and a series of screw blades *p*, which extend inward as near as practicable to the center, as shown in Fig. 4, and without perforations; as the results are by this construction greatly increased.

A reference to Fig. 3, will show that the central bearing of the struts *f g* upon each other is slightly to one side of a line drawn from the center of screw *d* to the bearing of the lower strut upon valve *e* and hence while link *i j* will resist great pressure, yet when it gives way, the struts instantly leave their position and liberate the valve. By actuating screw *d* when adjusting the sprinkler for use, the requisite pressure upon the struts and their confining link may be effected.

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

1. In an automatic sprinkler the combination of valve *e* seated in the tube like part *a*, of the sprinkler, the screw *d*, threaded in part *c* and formed at its entering end with a countersink and also with a narrow saw kerf that extends from the bottom of said countersink inward to the required extent as also laterally through the body of the screw, and the struts *f, g*, the former seated in said valve and the latter in the countersink in said

screw end, and the two struts seated the one in the other, and a confining link, susceptible to the effect of heat, arranged upon the arms of said struts to liberate the same when
5 the temperature is raised to the danger point, substantially as specified.

2. In an automatic sprinkler a link formed of two thin ribbon like pieces of metal, each having at one end an open slot and at the opposite end a hole $\frac{1}{2}$ to receive one arm of the
10 struts and each bent at an obtuse angle at its

slotted end; said two parts being united by solder upon their straight sides, with said bent ends each overlapping the opposite half of the link; whereby said bent ends will at
15 the first movement of said parts in opposite directions separate the same and prevent resoldering, substantially as specified.

PHINEAS W. SWAN.

Witnesses:

T. W. PORTER,

N. W. GREEN.