

(No Model.)

W. H. STRATTON.
AUTOMATIC FIRE EXTINGUISHER.

No. 489,342.

Patented Jan. 3, 1893.

Fig. 1.

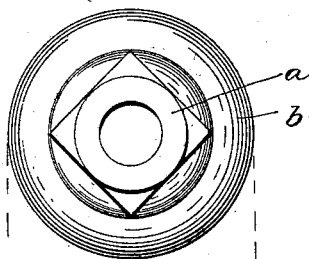


Fig. 2.

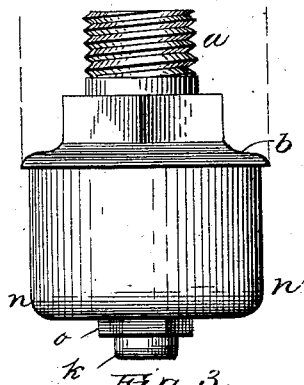


Fig. 3.

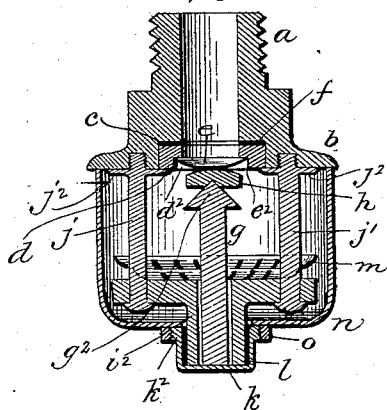


Fig. 4.

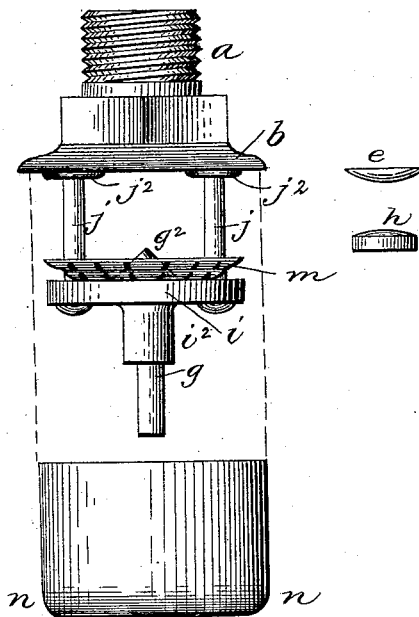
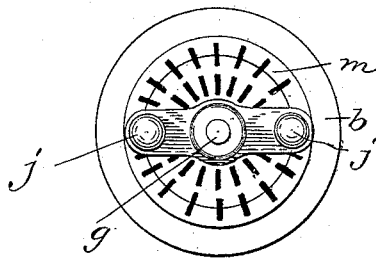


Fig. 5.



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UNITED STATES PATENT OFFICE.

WILLIAM H. STRATTON, OF PROVIDENCE, RHODE ISLAND.

AUTOMATIC FIRE-EXTINGUISHER.

SPECIFICATION forming part of Letters Patent No. 489,342, dated January 3, 1893.

Application filed August 21, 1891. Renewed December 7, 1892. Serial No. 454,398. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. STRATTON, a citizen of the United States, residing at Providence, in the county of Providence and State of Rhode Island, have invented a certain new and useful Improvement in Automatic Fire-Extinguishers, of which the following is a full, clear, and exact description.

This invention relates to sprinklers commonly employed in automatic fire extinguishing systems, and, more especially to that class of sprinklers which are normally sealed by a readily fusible soldering material. In practice, it is found that even after the solder has melted, the valves of the sprinklers refuse to open, and while the cause of such sticking is sometimes ascertainable, it is not always so. It may be from corrosion; or from a sort of welding or cohesion or adhesion of the parts. It is the object of my invention to overcome this difficulty. To this end, I construct a sprinkler with a rabbeted valve-seat, made of glass or equivalent material, and support the valve, which I prefer to make of saucer shape, by means of a post stepped in a cap, which cap is soldered to a yoke. I may combine with such cap a shell, hereinafter called a "protector," to protect the sprinkler from the action of noxious fumes and other deleterious elements in the atmosphere.

I will describe fully the principle of my invention and the best manner in which I have contemplated applying that principle, and will then particularly point out and distinctly claim the part or improvement which I claim as my invention.

In the accompanying drawings illustrating my invention, in the several figures of which like parts are similarly designated, Figure 1 is a top plan view. Fig. 2 is a side elevation. Fig. 3 is a vertical cross-section. Fig. 4 is a side elevation, showing the parts disassembled, and Fig. 5 is a bottom plan view, with the protector removed.

The sprinkler head is provided with a nipple *a* for connection with the distributing pipe, and this nipple terminates in a flange *b*. The lower portion of the nipple is recessed, as at *c*, to receive the valve-seat *d*, which valve-seat I prefer to make of glass, and construct it with a rabbet *d*² to receive the valve *e*. This rabbet may be made with straight or flaring

walls. I prefer to interpose between the valve-seat *d* and the recess in the nipple a packing ring *f* of rubber, or other suitable substance, in order to make a tight joint. The valve *e*, I prefer to construct of stiff but elastic material, such as hard spun brass, and in the shape of a saucer, the rim *e*² of which fits into the rabbet *d*² of the seat *d*. By constructing the valve in this manner, pressure will tend to spread the rim in the rabbet, and thereby insure the tight seating of the valve; while, if the valve be seated on a flat plane its spread under pressure would eventually destroy or nullify its resilience or else cause it to reverse. The valve-supporting post *g* has the head *g*² upon which rests a pillow *h* of hard substance to afford an extended bearing surface for the valve *e* in order to aid in preventing the reversal or buckling of the valve under pressure. The post *g* passes through an opening in a yoke *i* which yoke is supported from the flange *b* by means of screws or other headed hangers *j* made fast to the said flange. The hangers *j* are provided with flanges *j*² which serve to support the glass seat. The yoke *i* is provided with a tubular extension *i*². A cap *k* receives the end of the post and said cap is secured to the tubular extension of the yoke by means of fusible solder, as at *l*. The cap is provided with a screw-threaded flange *k*² for a purpose presently appearing.

m is a distributor of any approved construction. I prefer to employ one wherein slots permit the through passage of the water, and these slots or perforations or other openings are provided with dams of any character to prevent the water from wholly slipping past the slots or openings and divert some of it through the slots.

n is a protecting cap or cover, made of papier maché or other material, and of a size sufficient to inclose the yoke, posts and valve. This cap, herein referred to as a protector, is made with an opening in its bottom sufficiently large to permit it to be fitted around the tubular extension of the yoke *i*. The protector stands over the cap *k* and a nut *o* is screwed on to the screw-threaded flange *k*² of the cap *k*, and bearing against the protector forces it home against the flange *b*, thus making tight joints at top and bottom.

Now, when the solder *l* melts, the cap *k* is

free to slip off of the tubular post i^2 , and as it slips off it carries with it the protector. Of course, the post g also falls and the valve is driven from its seat by the pressure of water, and the water is free to descend upon the distributor in usual manner. When the post falls, the head g^2 settles down into the center of the distributor and then performs the function of the dome shaped piece of my patent No. 316,581, dated April 28, 1885.

While I prefer to use a vitreous valve-seat, I do not wish to be understood as limiting my invention thereto, as any material may be employed for this valve-seat which is practically non-corrodible, and is little likely to cause sticking of the valve, but I believe for all practical purposes a glass-seat is the best. Hence, by the use of the term "non-corrodible" as herein applied to this seat, I mean to include not only a glass seat, but any other seat coming within the definitions of this specification.

What I claim is:—

1. An automatic fire extinguisher having a nipple, a rabbeted valve seat of non-corrodible material, and a flexible saucer-shaped valve held to its seat by suitable supports, substantially as described.

2. An automatic fire extinguisher having a nipple, a rabbeted valve seat of non-corrodible material inserted in said nipple, a flexible saucer-shaped valve, a rigid pillow block for said valve, and means to hold the pillow block and valve in place, substantially as described.

3. In a sprinkler, the combination of a nipple recessed at its educt, a valve seat arranged

in said recess, a yoke, and posts screwed into the nipple and suspending the yoke from the nipple and having laterally projecting flanges upon which the valve seat rests, substantially as described.

4. The combination of the recessed nipple, a recessed valve seat arranged therein, a flexible saucer-shaped valve having its rim fitted into the recess of the valve seat, a cone-shaped post and a pillow block of reverse curvature from the valve for supporting the valve, a distributor, and a yoke for supporting it, substantially as described.

5. A sprinkler and a valve to close it, combined with a valve support, a protector, and a cap held in place beneath the valve support and protector by a fusible medium to hold them in position normally and to free them upon an undue elevation of temperature, and having an adjustable medium to force the protector to place, substantially as described.

6. In a sprinkler, a valve, a support for the valve, a yoke having a tubular extension, a cap detachably secured to said tubular extension and provided with a screw-threaded flange, a protector, and a nut engaging the said screw-threaded flange of the cap and bearing upon the protector to hold it in place, substantially as described.

In testimony whereof I have hereunto set my hand this 18th day of August, A. D. 1891.

WILLIAM H. STRATTON.

Witnesses:

F. A. WALDRON, Jr.,
ANDREW B. PATTON.