(No Model.)

O. B. HALL.

AUTOMATIC FIRE EXTINGUISHER.

No. 467,970. Patented Feb. 2, 1892.

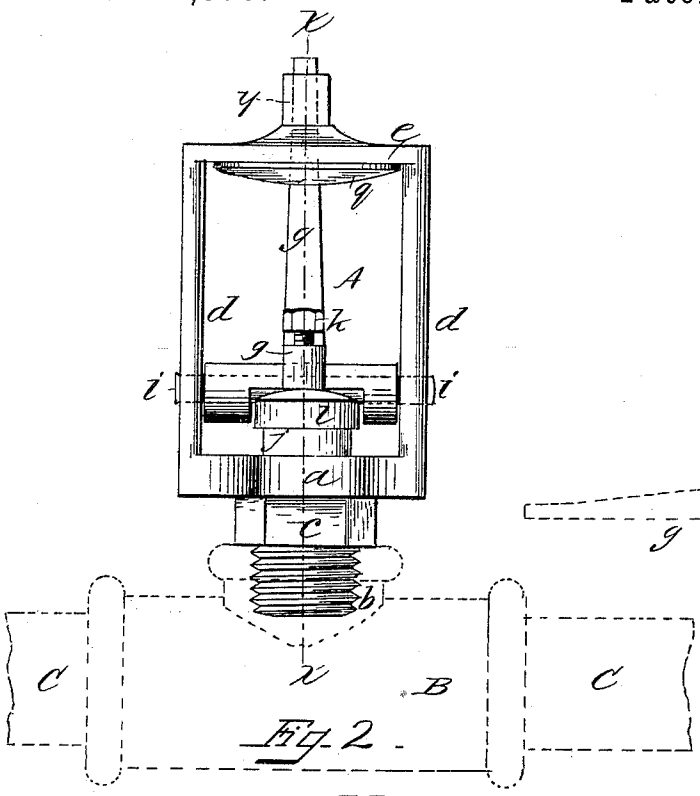

Fig. 2.

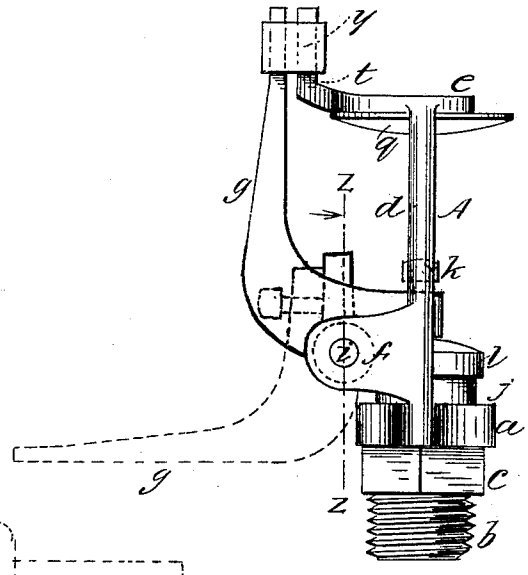

Fig. 1.

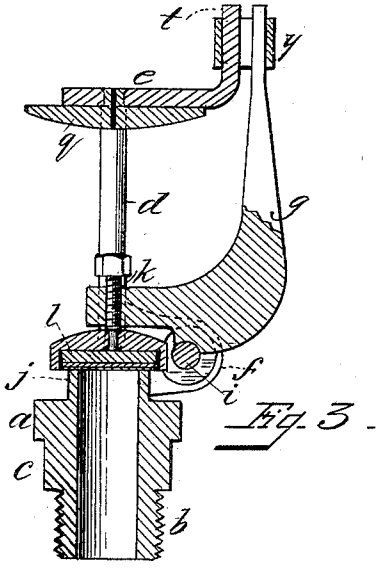

Fig. 3.

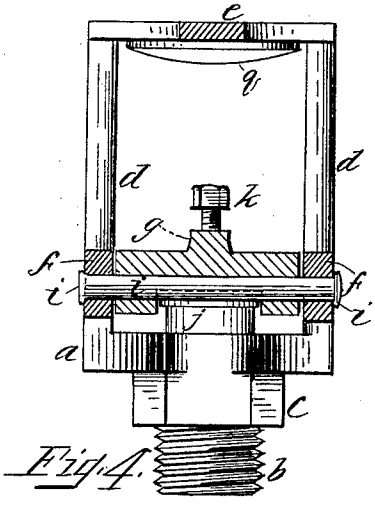

Fig. 4.

Witnesses.
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UNITED STATES PATENT OFFICE.

OSBORN B. HALL, OF MALDEN, MASSACHUSETTS.

AUTOMATIC FIRE-EXTINGUISHER.

SPECIFICATION forming part of Letters Patent No. 467,970, dated February 2, 1892.

Application filed January 3, 1891. Serial No. 376,684. (No model.)

To all whom it may concern:

Be it known that I, OSBORN B. HALL, of Malden, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Automatic Fire-Extinguishers, 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 as when sealed by a fusible link. Fig. 2 is a front elevation taken as viewed from the right in Fig. 1. Fig. 3 is a central vertical section taken as on line *x*, Fig. 2. Fig. 4 is a vertical section taken as on line Z, Fig. 1.

This invention has for its object the production of an automatic fire-extinguisher which shall embody the essential features of that patented to Caleb C. Walworth and myself October 23, 1883, No. 287,071, and which can be arranged above the pipe with a downward-seating valve, whereby all sediment in the water will settle in the bottom of the pipe and at the farthest point from the valve, instead of settling upon it, as when the extinguisher is arranged beneath the pipe; and it consists in certain features of novelty and the arrangement thereof, as will be hereinafter described and claimed.

Referring again to said drawings, A represents a rectangular frame embodying a lower bar *a* and an upper bar *e*, the two being united by the vertical bars *d d*. Beneath bar *a* is formed the rectangular section *c* for engagement by a suitable wrench for engaging the extinguisher with or disengaging it from the coupling B of supply-pipe C. A threaded nipple *b* extends below section *c* and is engaged with said coupling. Upon each bar *d* is formed a lug *f*, in which is seated the pivot *i*, upon which is mounted the angle-lever *g*, the longer and counterpoising arm of which extends upward and is engaged and held by link *y*, supported by stud *t* of bar *e*, the shorter arm of said lever having threaded in it the screw *k*, on which is pivotally supported the valve *l*, which closes upon seat *j* to control the flow of water from the pipe through the extinguisher, a suitable packing being arranged in said valve, as shown.

The deflector is shown at *q* and as secured to and supported by bar *e;* but it may be formed integral therewith, if preferred. By my arrangement of the respective parts the deflector is between the valve and the fusible seal, and the valve is raised from its seat coincidently with the movement of the liberated unbalanced lever when the fusible seal gives way, the force due to the momentum of the lever being exerted directly upon the valve to raise it from its seat, thereby insuring its rising therefrom, even though no force was exerted upon it, by pressure of the fluid in the pipe when the rise in temperature causes the seal to give way. Besides, the valve rises obliquely from its seat and most rapidly at the side opposite the fusible seal, thereby deflecting the water that first escapes away from the side where the seal is located, thus obviating all danger of the solder being reset by the cooling action of the water.

The position of the valve-securing lever and the valve when the sprinkler is operative is shown by dotted lines in Fig. 1. By duly actuating the valve-supporting screw *k* after lever *g* is engaged by link *y* the requisite pressure of the valve upon its seat and the proper strain upon the lever is produced.

Instead of the fusible link shown any of the various other fusible seals may be employed to hold the valve to its seat through the lever; but I prefer the link for such purpose. By my arrangement of the respective parts of the extinguisher the fusible seal is not affected in its temperature by the water in the extinguisher at and below the valve, and hence is not cooled thereby, as is the case when the seal is arranged adjacent to the valve-seat, nor is the heat imparted to the seal by the surrounding atmosphere conducted off into the water-conduit fittings, thereby delaying the opening of the seal, the seal having no connection with the water-conduits except through the attenuated bars *d* and the long arm of the lever.

I claim as my invention—

1. In an automatic fire-extinguisher having a suitable frame provided with a threaded nipple, a valve-seat, and a fusible seal, a lever pivoted to said frame and to the valve and arranged to hold the valve to its seat and to be

held in position by said seal, and a deflector arranged between the valve-seat and the fusible seal, substantially as specified.

2. In an automatic fire-extinguisher, the combination of a frame, as A, adapted to be secured to the pipe-coupling and provided with a valve-seat, an angle-lever, as *g*, pivoted to said frame and having an arm arranged to extend over and hold the valve to its seat and pivoted to said valve, and an arm extended to and engaged by link *y*, attached to stud *t*, and an adjusting-screw *k*, threaded in said lever to act upon the valve, and a distributer arranged between the valve and link, substantially as specified.

OSBORN B. HALL.

Witnesses:
T. W. PORTER,
RALPH W. E. HOPPER.