J. R. BROWN & W. A. FOSKETT.

Automatic Fire-Extinguishers.

No. 166,452. Patented Aug. 10, 1875.

Fig. 1.

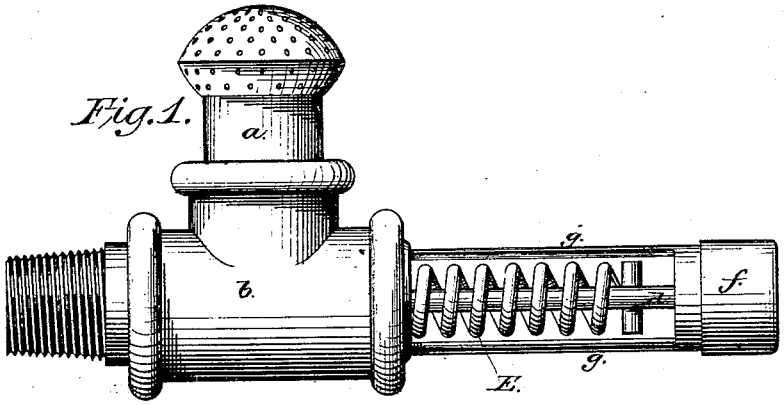
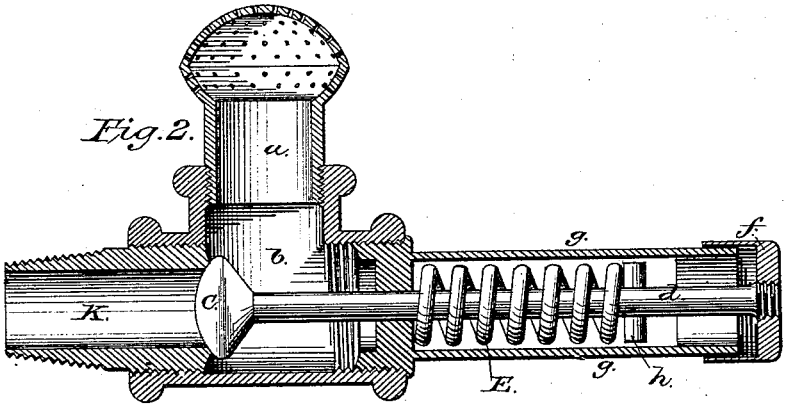


Fig. 2.



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UNITED STATES PATENT OFFICE.

JOSEPH R. BROWN AND WILLIAM A. FOSKETT, OF NEW HAVEN, CONN.

IMPROVEMENT IN AUTOMATIC FIRE-EXTINGUISHERS.

Specification forming part of Letters Patent No. **166,452**, dated August 10, 1875; application filed January 30, 1875.

To all whom it may concern:

Be it known that we, JOSEPH R. BROWN and WILLIAM A. FOSKETT, both of the city and county of New Haven, State of Connecticut, have invented a new and useful Improvement in Automatic Fire-Extinguishers; and we hereby declare the following to be a full, clear, and exact description of the same which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings forming part of this specification.

Figure I is a view showing the device as attached to the water-distributing-pipes. Fig. II is a section showing the interior arrangement of the device.

The same letter of reference indicates the same part in the several figures of the drawing.

The object of this invention is to so arrange a valve in connection with a sprinkler and a water-pipe that the water shall be shut off from the sprinkler when there is no fire, but shall open as soon as the temperature is raised to a point indicating the presence of a fire.

The nature of the invention consists in the arrangement of the valve with the sprinkler and the fusible solder, as is more fully described hereinafter.

In the drawings, *a* is a perforated sprinkler secured to the T-shaped pipe *b*. C is a valve resting against the valve-seat formed by the pipe K. *d* is the valve-stem secured to the valve C at one end; the other end is provided with the cap *f*. E is a spring, compressed when the valve is in its proper position, as shown. *g g* are projecting arms, secured to the pipe *b* by a screw-thread, the other end being united by the cylindrical piece entering the cap *f*.

This invention relates to that kind of automatic fire-extinguishers in which the heat generated by a fire melts a fusible solder, and thus admits the water to the sprinkler nearest the fire, automatically.

The operation of the device is as follows: The cap *f*, secured to the valve-stem *d*, is forced down so as to compress the spring E until the cap passes over the cylindrical part, uniting the arms *g g* sufficiently to be soldered to the same with a solder fusible at a given temperature. The arms *g g*, the valve C, valve-stem *d*, cap *f*, and spring E, being thus united, are screwed into the T-piece *b* until the valve C rests firmly against the valve-seat, and forms a tight joint. The whole device is secured to one of a system of water-pipes. When, now, a fire takes place near this device, the temperature of the air is rapidly raised, and as soon as the melting-point of the fusible solder is reached, the cap *f* is released, and the valve is forced open by the spring E. The water flows into the sprinkler, and is thrown in a fine spray on the fire.

This arrangement insures the prompt and efficient action of the automatic apparatus, as the water cannot come in contact with the parts to which the solder is applied, as this part is removed from the pipe, and is so connected by arms that the atmosphere shall have free access to the same, and also prevent the conduction of heat from the same to the water in the pipes.

In place of the cap *f*, a button may be secured to the end of the valve-stem *d* and soldered, with fusible solder, to the arms *g g*; or a disk may be permanently secured to the arms *g g*, and the valve-stem may be secured by fusible solder to the said disk.

Where the water-pipes supplying the distributing-pipes are connected to and supplied from a tank, and have but moderate pressure or head of water, the spring E insures the prompt opening of the valve C. When, however, a greater pressure of water is used, so that the prompt opening of the valve may be relied upon, the spring E may be dispensed with.

By this arrangement, as soon as a fire is extinguished, a new valve, previously soldered to the arms, may be screwed into the pipe *b*, and thus the water shut off from the sprinkler; or the valve may be forced to its seat and soldered as before. The sprinkler may be removed, cleaned, and replaced, and the apparatus is again ready for action.

In large buildings this is of great importance, as by these means much damage by water is avoided.

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

1. In combination with the sprinkler *a*, se-

cured to a branch of the T-piece *b*, as described, the valve C, the stem projecting horizontally beyond the T-piece, and the cap *f*, secured either to the valve-stem or to the projecting arms *g g*, by fusible solder substantially as and for the purpose described.

2. The combination of the T-piece *b*, having the valve C placed within the same, the valve-stem *d*, cap *f*, projecting arms *g g*, and the spring E, arranged to open the valve as soon as the solder is melted, substantially as and for the purpose herein described.

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Witnesses:
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