

(No Model.)

J. R. BROWN.

AUTOMATIC FIRE EXTINGUISHER.

No. 278,219.

Patented May 22, 1883.

Fig. 1.

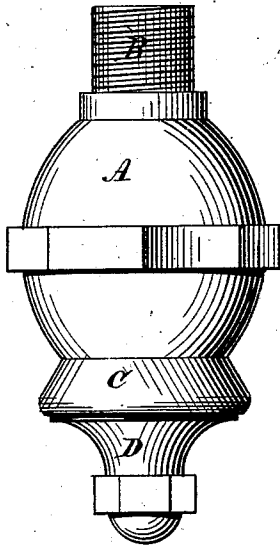


Fig. 2.

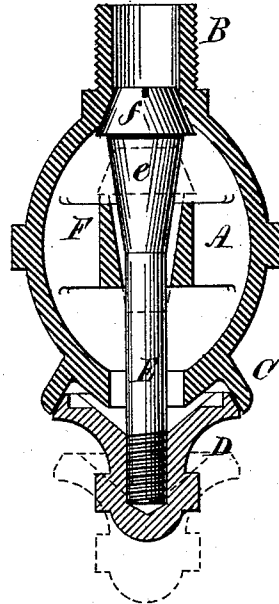


Fig. 3.

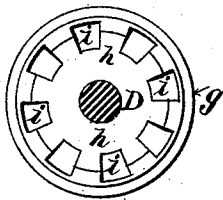
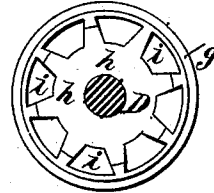


Fig. 4.



WITNESSES:

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UNITED STATES PATENT OFFICE.

JOSEPH R. BROWN, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR TO THE
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AUTOMATIC FIRE-EXTINGUISHER.

SPECIFICATION forming part of Letters Patent No. 278,219, dated May 22, 1883.

Application filed April 24, 1882. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH R. BROWN, of the city and county of Providence, and State of Rhode Island, have invented a new and useful Improvement in Automatic Fire-Extinguishers; and I hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

This invention has reference to an improvement in the class of automatic fire-extinguishers in which the discharged water is distributed by means of a deflector; and it consists, first, in the peculiar form of the deflector, in the means for adjusting the interior valve, and in the improved means for supporting the deflector when in operation, as will be more fully set forth hereinafter.

Figure 1 is a view of my improved automatic fire-extinguisher. Fig. 2 is a sectional view of the same, showing the deflector secured by solder, in solid lines, and released in broken lines. Fig. 3 is a top view of the deflector, showing the same provided with a series of cavities; and Fig. 4 is also a top view of the deflector, showing the cavities made larger than those in Fig. 3.

Referring, first, to the improvement in the deflector, it will be necessary to state that in a fire-extinguisher it is desirable to break up the water discharged into spray, and while a large portion is to be forced against the ceiling of the room the rest is to be as widely distributed as possible. With a smooth distributor the water is dispersed first in a sheet, which divides into spray only after it has reached a certain distance, but all the water will be thrown in a fixed direction. For this purpose deflectors have been provided with serrated edges; but such serrated edges must project beyond the soldered joint, and are therefore objectionable, as they are liable to catch lint, dust, and other matter usually floating in the air.

My improved deflector depends on the principle that water forced against a surface at any angle is deflected at the same angle, and that different streams of water meeting will each deflect and disperse the other. To carry this principle into effect I provide my deflector first

with a smooth soldering surface or rim, and within this with a concave surface broken up by cavities, so that the water discharged under pressure will impinge on these surfaces, and the various streams will assist each other in breaking up the water into spray.

In the drawings, A is the body of my improved automatic fire-extinguisher.

D is the screw-thread by which it is secured in the usual fitting.

C is the flange to which the deflector is soldered.

D is the deflector.

E is a screw-threaded stem, secured by a screw-thread in the deflector D, and passing through the bridge F, in which there is a conical seat constructed to receive the conical end *e* of the stem E, by which the deflector is firmly supported when detached, so as to be exactly concentric with the discharge-opening.

f is the auxiliary valve, by means of which the water in the main is prevented from entering the case A and getting near the soldered joint until the deflector has been released. The valve *f* is provided with a groove into which a screw-driver can be inserted, so that when the deflector has been soldered to the flange C the valve *f* can be forced to its seat. By this arrangement the stem E does not extend through the deflector, and no leak can take place at this point.

In the deflector D, *g* is the outer surface, which is soldered to the flange C. *h* is the concaved or inwardly-inclined surface, and *i i* are the cavities.

The operation of the device is as follows: When the deflector has been secured by a proper solder, fusible at a low temperature, the valve *f* is turned until the same makes a tight fit with its seat. The device is now secured to the distributing-pipes, and when a fire breaks out the soldered joint becomes weakened, the air contained in the case expands and assists in the release of the deflector. The deflector D, the stem E, and valve *f* drop until the conical portion *e* of the stem E rests in the bridge F and firmly supports the deflector. The outrushing water is thrown against the ceiling by the dishd form of the deflector, but is broken into spray by the par-

ticles of water entering the cavities *ii* and meeting a surface different from the dished surface, so that the water is thrown in every direction and dispersed over a large area.

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

1. In combination with an automatic fire-extinguisher, a deflector having an outer soldering-surface, an inwardly-dished surface,
10 and a number of cavities constructed to break up the water, as described.

2. In an automatic fire-extinguisher, a deflector having an outer soldering-surface by which it is secured water-tight, and having its
15 deflecting-surface formed of a number of irregular surfaces, so as to discharge the water

impinging against the deflector in different directions, as described.

3. The combination, with the case A, of the flange C, the deflector D, stem E, provided 20 with the conical enlargement *e*, and the bridge F, provided with the conical seat constructed to support the deflector, as described.

4. The combination, with the case A and the deflector D, of the threaded stem E, pro- 25 vided with the valve *f*, constructed to seat the valve, as described.

In witness whereof I hereunto set my hand.

JOSEPH R. BROWN.

Witnesses:

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WM. L. COOP.