

(Model.)

J. R. BROWN.

AUTOMATIC FIRE EXTINGUISHER.

No. 245,915.

Patented Aug. 16, 1881.

Fig. 1.

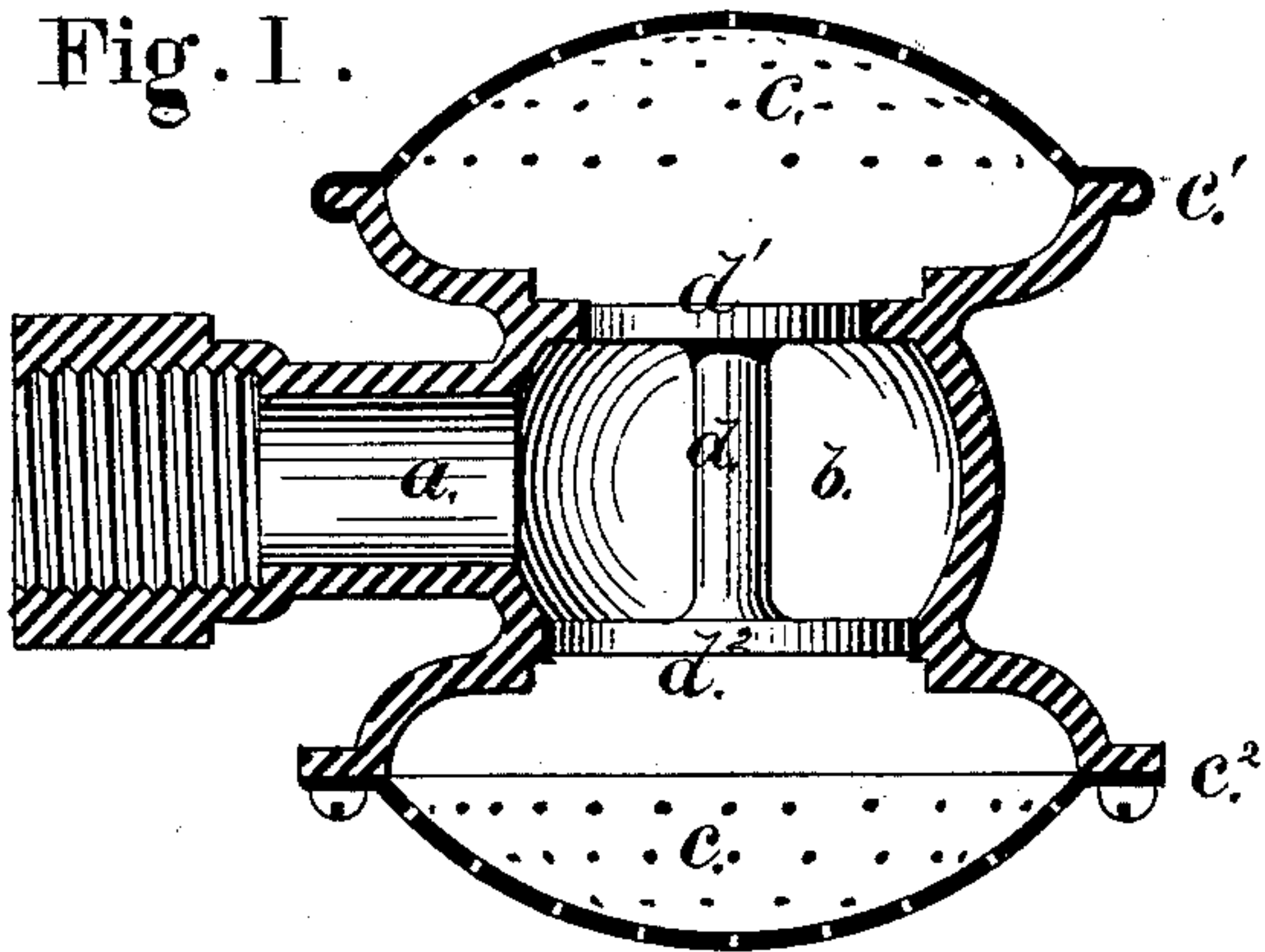
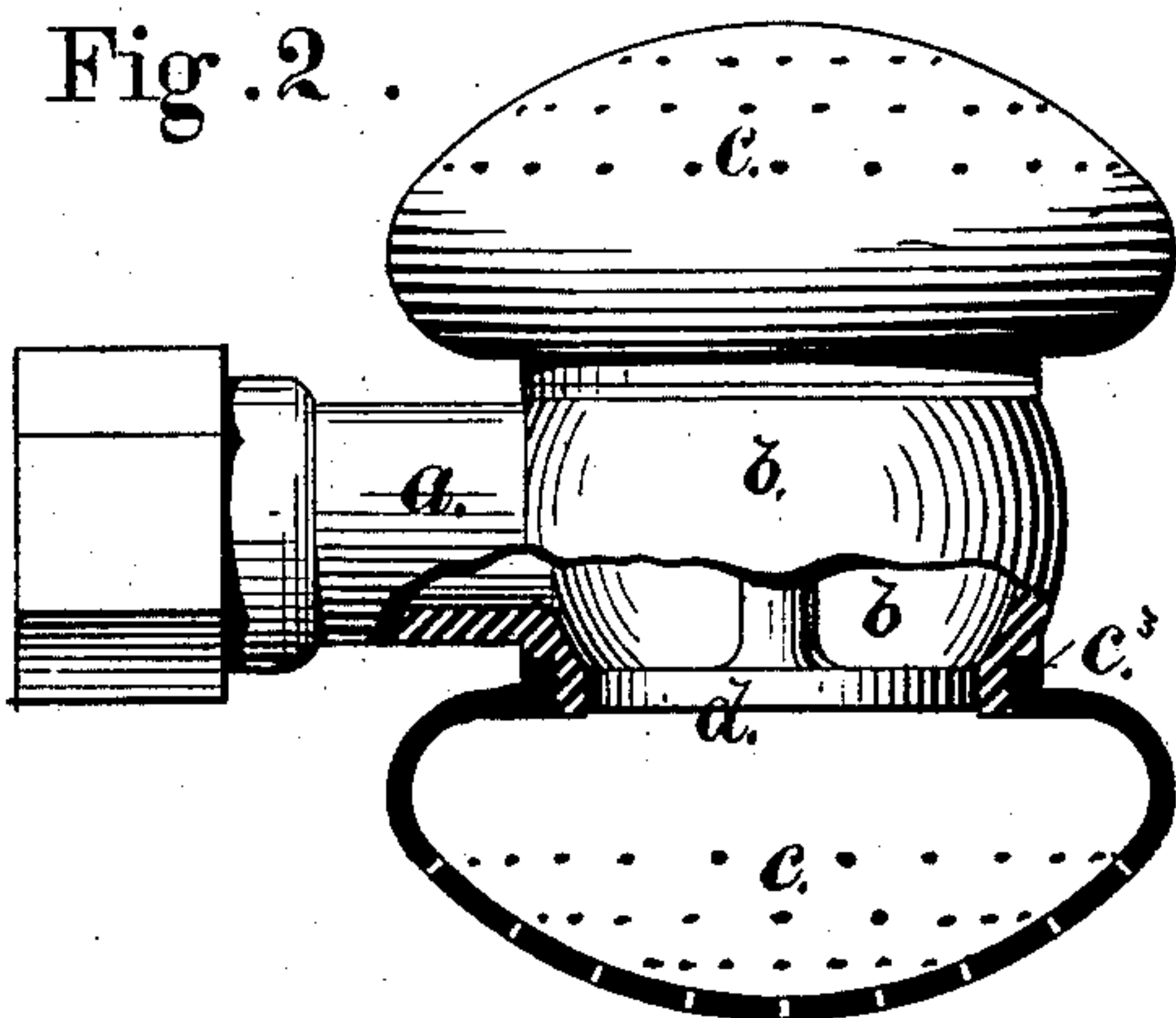


Fig. 2.



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# UNITED STATES PATENT OFFICE.

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## AUTOMATIC FIRE-EXTINGUISHER.

SPECIFICATION forming part of Letters Patent No. 245,915, dated August 16, 1881.

Application filed March 14, 1881. (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  
5 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.

10 In automatic fire-extinguishers the most important consideration is the thorough distribution of water in a uniform spray on the fire and a thorough drenching of the ceiling, for as long as the ceiling is protected by water the fire will  
15 be confined in the story in which it originated; and by distributing the water in a fine spray on the fire a large volume of steam is quickly generated, which, by its efforts to escape at every opening, prevents the admission of air  
20 to the fire, so that the products of combustion assist the water and steam in smothering and extinguishing the fire in less time and with less damage from fire or water than can be done by throwing a stream of water from a hose or  
25 nozzle, which carries large quantities of air with the water.

Figure 1 is a sectional view of my improved automatic fire-extinguisher. Fig. 2 is a view of the same, partly in section.

30 It will be observed that there are two perforated distributors, which are constructed to distribute the water upward and downward. They are especially designed to distribute the water on the ceiling and on the fire, and will  
35 more effectually protect a building than distributors as heretofore constructed. Under special conditions they may, however, be used so as to distribute the water laterally.

In the drawings, *a* is the water-inlet. *d* is  
40 a differential valve, the disk *d'* being of less diameter than the disk *d''*, both disks being united by a central stem. Both disks are soldered to the case *b*, so as to prevent the water from reaching the perforated distributors *c c*.  
45 These distributors I prefer to make of perforated sheet metal, which can be secured to the case *b* by spinning or drawing the metal over

the edge of the case *b*, as shown at *c'*; or the perforated sheet may be secured by screws or rivets, as shown at *c''*, both in Fig. 1.

50 The distributors *c c* may be made and usually are made so that they can be unscrewed from the case *b* when the valve *d* is to be soldered to the case, and replaced afterward. The distributor may be made of cast metal, 55 and the screw-thread may be made in any suitable manner, as the joint is not required to be tight.

As these automatic fire-extinguishers are usually secured to the end of the branch pipes, 60 the water can be drawn off from the pipes after a test or after a fire, and no water will remain in the extinguishers.

The distributors, when screwed onto the case, as shown in Fig. 2, may be removed from time 65 to time and cleaned, and when the water is maintained in the system of pipes and the branch pipes collect dirt, scale, or other impurities (which would be fatal to other automatic fire-extinguishers by clogging the dis- 70 tributors and preventing the distribution of water) this extinguisher will perform its functions, as the impurities collect in the lower distributor and do not affect the upper, which, by sending the spray of water against the ceiling, 75 distributes the same over a large area from the ceiling downward.

The operation of this automatic fire-extinguisher is as follows: The differential valve *d* being secured by solder and connected with a 80 system of pipes in which water is maintained under pressure, in case of a fire the solder with which the valve is held will melt at from 150° to 200° and release the valve. The diameter and area of the disk *d''* being greater than the 85 area of the disk *d'*, the valve will move downward by the pressure of the water, aided by the weight of the valve, and the water will be discharged from both distributors.

Having thus described my invention, I claim 90 as new and desire to secure by Letters Patent—

1. In a distributor, the combination, with the inlet *a* and case *b*, of the perforated distributors *c c*, secured to the case *b*, as described,



and constructed to distribute the water in opposite directions, as described.

5 2. An automatic fire-extinguisher consisting of two distributors constructed to distribute the water in opposite directions, and a differential valve, secured by fusible solder, constructed to be released by heat and moved by the pressure of the water so as to open the outlets to both distributors, as described.

3. The combination, with the inlet *a*, the case 10 *b*, and distributors *c*, of the valve *d*, having the disks *d'* and *d''* secured together, one of the disks having less area than the other, substantially as and for the purpose set forth.

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Witnesses:

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