

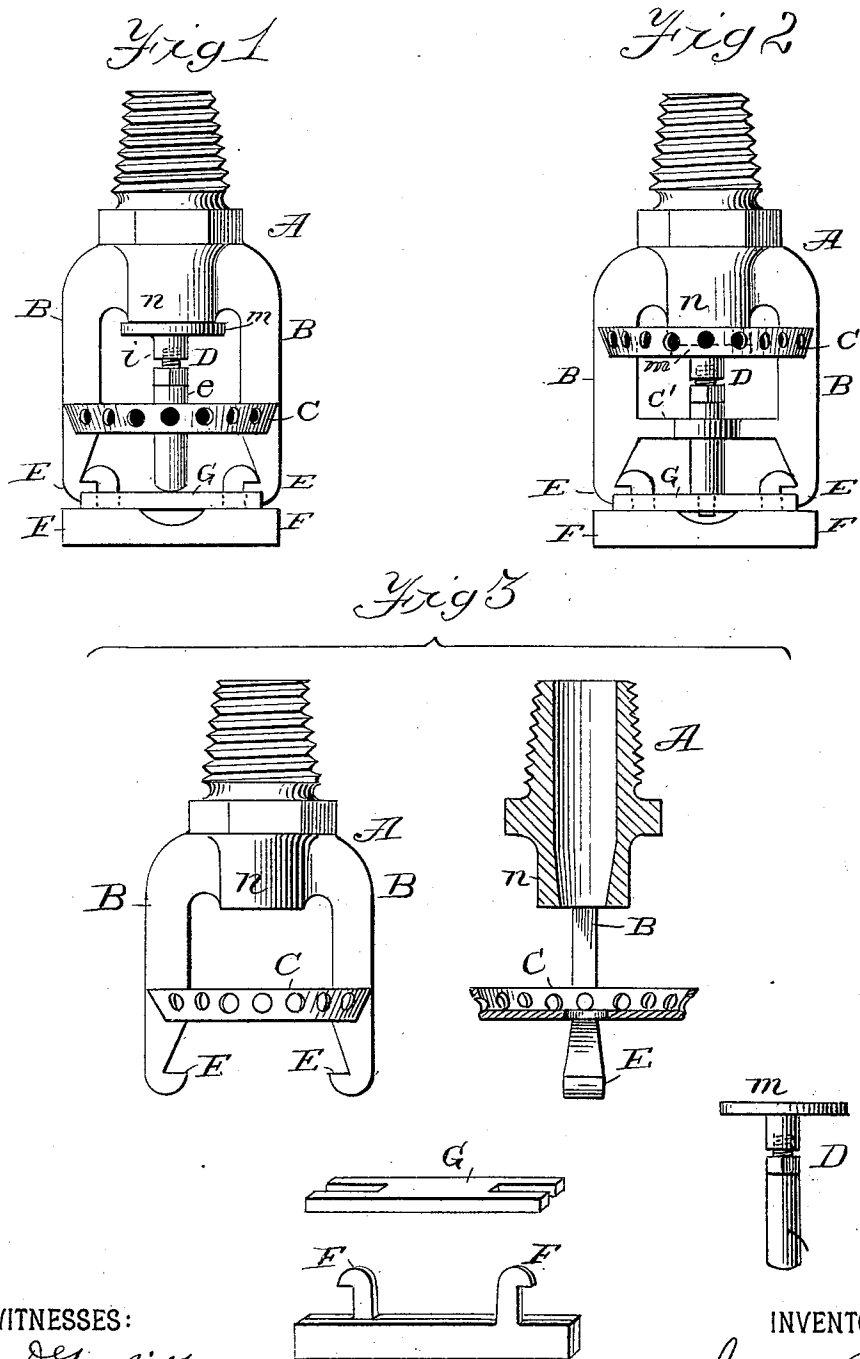
(No Model.)

J. BUEL.

AUTOMATIC FIRE EXTINGUISHER.

No. 329,360.

Patented Oct. 27, 1885.



WITNESSES:

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JAMES BUEL, OF WOBURN, MASSACHUSETTS.

AUTOMATIC FIRE-EXTINGUISHER.

SPECIFICATION forming part of Letters Patent No. 329,360, dated October 27, 1885.

Application filed April 20, 1885. Serial No. 162,980. (No model.)

To all whom it may concern:

Be it known that I, JAMES BUEL, of Woburn, Middlesex county, State of Massachusetts, have invented Improvements in Automatic Fire-Extinguishers, of which the following is a specification.

My invention relates to that class of fire-extinguishers in which the fluid-discharge opening or sprinkler is held closed by movably-attached levers secured together by a cord or substance that is combustible, or by an alloy or compound that will rupture or fuse in the heat of a fire.

In this class of fire-extinguishers as heretofore used the movable levers are pivoted or suspended back of the outlet or sprinkler, and in those in which a spreader is employed the spreader is attached to and movable with the valve-stem.

In the form of fire-extinguisher which I have devised a discharge-opening is held normally closed by levers in such relation to the other parts of the extinguisher as to admit of the employment of a spreader rigidly secured in front of the discharge-opening with obvious advantages over the use of a movable spreader; or, if desired, a spreader can be used that is movable when the parts forming the valve and valve-stem are released by heat, and when such movable spreader is used it will be guided in a more certain and satisfactory manner in the form of extinguisher devised by me than in those forms heretofore used.

In the form of fire-extinguisher devised by me the fluid-discharge opening is not obstructed by a rose-head, by a valve-stem, or otherwise, but is an unobstructed and gradually-tapering nozzle that will deliver the water upon the spreader in front of the outlet *n* with the best possible effect. This form of extinguishing device is adapted to be used pendent or in the position the reverse of pendent. When used in the position the reverse of pendent, the water can be excluded from the system and the extinguisher devices will be completely dripped, and there will be no water left in them to be frozen. When, however, they are used pendent, any water remaining in the nozzles of the extinguishers, on account of the taper of the nozzle and the absence of any obstruction therein, will become detached from

the interior of the nozzle as it freezes in an obvious manner, and the device will not be burst, as would occur if the water did not wedge itself loose as it freezes.

My invention consists, primarily, of a fire-extinguishing device having a fluid-discharge opening held normally closed by a separable yoke that is removably secured in front of said opening, substantially as hereinafter described.

My invention further consists in certain combinations and subcombinations, as will be hereinafter described and claimed.

In the accompanying drawings, Figure 1 shows an automatic fire-extinguisher constructed according to my invention. Fig. 2 shows a modified form of the same, and Fig. 3 shows the parts of my fire-extinguisher in detail.

Referring to Figs. 1 and 3, A is the screw-threaded body of the extinguishing device, having an outlet, *n*, and arms B B, to which is rigidly attached the deflector or spreader C. Beneath the spreader C are hooks E E, secured thereto in any suitable manner; but the body A, arms B B, spreader C, and hooks E E are preferably cast of metal to form one casting. The levers F F are secured together by an easily-fusible solder, and their hooked portions are interlocked with the hooks E E, and secured in place by a cross-bar, G, which rests upon shoulders upon the hooks F F, and is slotted to extend by the interlocked hooks E E and F F, and thereby to prevent lateral displacement of these parts. By this arrangement of the interlocking of the movable parts of an extinguishing device in front of its outlet the cross-bar rests upon parts that are detachable, in contradistinction to being movable, and less liable to fail to operate, while it is in such relation to the interlocking hooks as to lock them together until they are released by heat. By this double use of the cross-bar the accidental opening of the device is prevented, and the consequent accidental water damage common in other forms is avoided. The employment of hooks interlocked in place of pivoted arms gives additional security, as they are less liable to become inoperative by corrosion or by oil and lint accumulating around them. In my form of extinguisher the hooks are made of non-corrosive metal, and the movable parts,

when tinned with solder where they touch each other, can be used, and will be operative in places where acid fumes are present and other forms of extinguishers would become inoperative. When desired to make this form of extinguisher more sensitive to heat, the portions of the levers F F which form the separable yoke may be narrow strips or wires, in place of the wider levers shown. The valve *m*, of brass faced with lead, and having an adjustable stem, D, is pressed against the outlet *n*, and, passing through a hole in the bottom of the spreader C, rests upon the cross-bar G, and is there adjusted to close the outlet *n* water-tight. The valve-stem may be made adjustable by having a screw-threaded portion tapped into the valve portion at *i*, and be provided with a square place at *e*, so that it may be turned with a wrench or pinchers.

In Fig. 2 the spreader C is shown as movable with the valve *m*, and its stem D is adjustable by having a screw-threaded portion running in the cross-bar G, which is tapped to receive it. A bar, C', having a hole there-through to guide the stem D, is shown. The spreader C is slotted, so as to extend by the arms B B, and to be guided in its descent by them. The guiding of the valve-stem D through the bar C' and of the spreader C by the arms B B prevents the spreader from becoming turned, so as to get wedged in a manner to defeat its proper operation, as sometimes occurs in those forms heretofore used. The levers F F, with their hooked portions, and with the necessary shoulders to support the cross-bar G, may be struck out of sheet-brass and secured together to form a separable yoke by winding with a combustible cord, by rings of easily-fused metal slipped over their ends, or by being sweated together by means of an easily-fusible solder that will become ruptured or fused by the action of an incipient fire, preferably in the last-named manner.

The operation of the device is as follows: The heat of a fire acting upon the separable yoke causes it to break apart under the strain which exists when the stem D is pressing between the outlet *n* and the yielding cross-bar G, and it falls, together with the cross-bar G, allowing the outlet to become open and discharge the extinguishing-fluid against the spreader C, which spreads it over the threatened area beneath and above in a well-known manner. The valve *m* may be held to its place by a screw passing through the cross-bar G, or a nut pressed against the cross-bar G, the said valve *m* and screw being in such relation as that the screw will be detached from the valve-piece so that, if desired, the valve *m* and said screw, nut, cross-bar, and the levers F F will be wholly removed from the fire-extinguisher when it is acted upon by heat.

I am aware that one arm can be used in place of the arms B B to support the spreader C or bar C', and that pins or other equivalents for the hooks E E and F F may be employed. The pieces F F of the separable yoke are preferably corrugated upon the surfaces to be soldered.

What I claim is—

1. In an automatic fire-extinguisher, an unobstructed outlet, a spreader rigidly secured in front of said outlet, and a valve held to normally close said outlet by a cross-bar resting upon a separable yoke and interlocking with said yoke, and with the supporting-hooks E E, substantially as described.

2. The hooks E E and F F, located in front of the outlet of the sprinkler and held locked together by the cross-bar G until acted upon by heat.

JAMES BUEL.

Witnesses:

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J. FREDK. BUEL.