

No. 768,676.

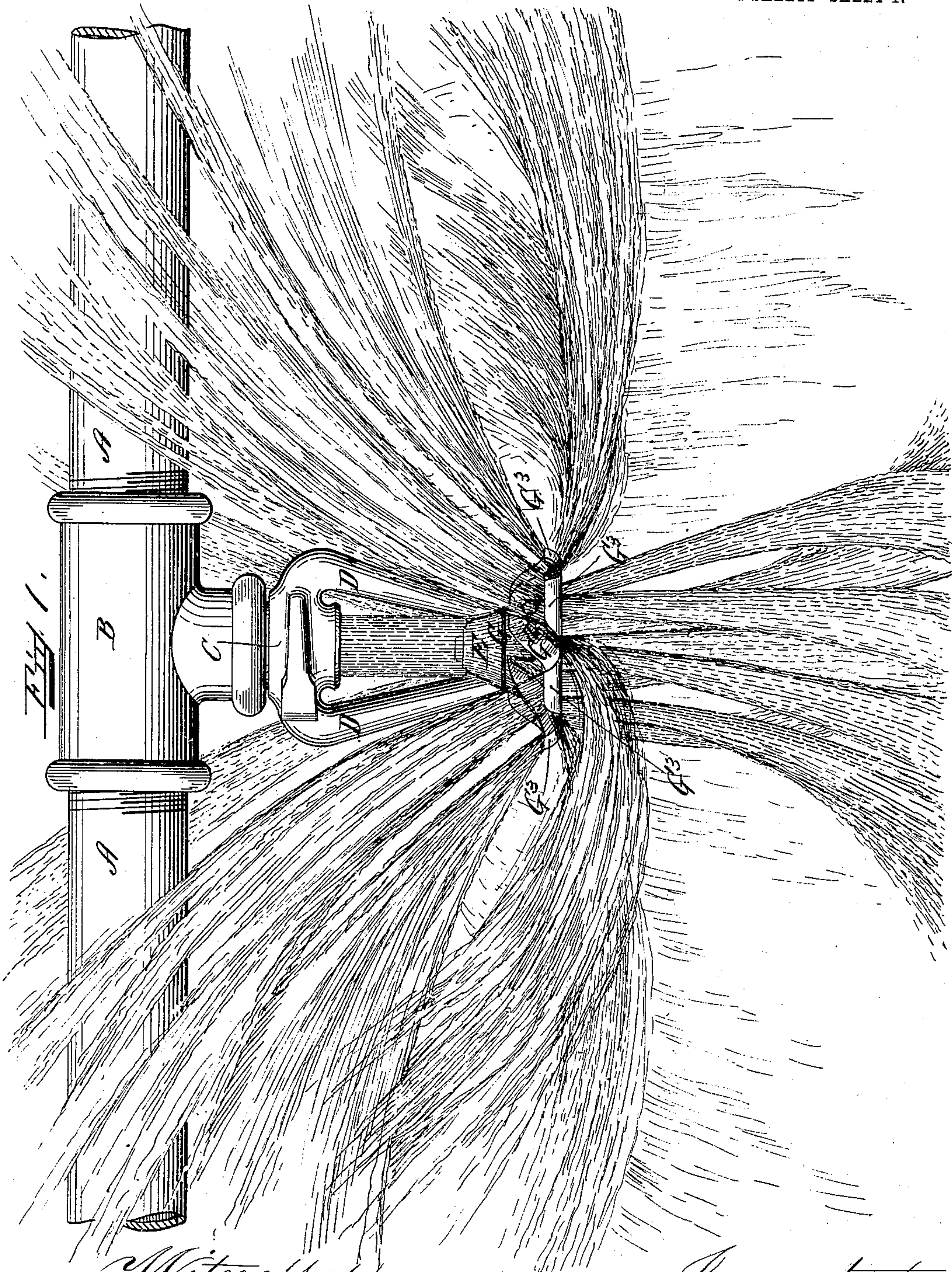
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C. W. McDANIEL.  
AUTOMATIC FIRE EXTINGUISHER.

APPLICATION FILED JUNE 23, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

CHARLES W. McDANIEL, OF PORTSMOUTH, NEW HAMPSHIRE, ASSIGNOR  
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## AUTOMATIC FIRE-EXTINGUISHER.

SPECIFICATION forming part of Letters Patent No. 768,676, dated August 30, 1904.

Application filed June 23, 1903. Serial No. 162,790. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES W. McDANIEL, of Portsmouth, in the county of Rockingham and State of New Hampshire, have invented certain new and useful Improvements in Automatic Fire-Extinguishers, of which the following is a specification.

My invention relates to new and useful improvements in automatic fire-extinguishers; and its main object is to produce a new and efficient device which will not allow the discharge of water until the temperature has reached a point caused by the presence of fire. This and other objects are carried out by the device hereinafter shown and described.

My invention consists of certain novel features hereinafter described, and particularly pointed out in the claims.

In the accompanying drawings, which illustrate a construction embodying my invention, Figure 1 is a side view of my improved fire-extinguisher, illustrating the discharge of water when the device has become operative due to the presence of fire. Fig. 2 is an end view of the fire-extinguisher with the parts in their closed position. Fig. 3 is a side view illustrating the position of the parts when the device is not in operation. Fig. 4 is a sectional view of the parts, showing the same in closed position. Fig. 5 is a top plan view of the device detached from the water connection. Fig. 6 is a top plan view of the revolving distributor. Fig. 7 is a detail view of parts of the strut forming a lock controlling the flow of water. Fig. 8 is a plan view of a piece of mica and oiled paper hereinafter described. Fig. 9 is a detail view of the valve with its spring.

Like letters of reference refer to like parts throughout the several views.

To the water-pipe A, passed along the ceiling, is attached the T B, into which is screw-threaded my improved fire-extinguisher C, from which downwardly extend on opposite sides the arms D, carrying the sleeve E, into which is screw-threaded the set-screw F, Fig. 4, provided with an inner channel F', extending through from end to end. Closing the water-passage B' in the extinguisher C is

the valve H, and between said valve and its seat is placed a mica cap H', over which is placed a cap of oiled paper H<sup>2</sup>, which prevents corrosion around the valve-seat. This is liable to happen in sulfite-mills and the like where alkali gathers around the valve, corroding the parts and preventing the opening of the valve. This arrangement prevents the valve from corroding onto the valve-seat. Furthermore, this mica cap and oiled-paper cap make a water-tight joint, as they take up the imperfections between the valve and its seat.

For holding the valve closed there is provided a locking device composed of two parts C', of brass, which are soldered together, as indicated at C<sup>2</sup>, and provided with extensions C<sup>6</sup>, fitting into the bottom of the valve H and into the top of the set-screw F, which acts as an abutment, as shown in Fig. 4. Between these two parts, which are known in the art as a "strut," is a pin C<sup>4</sup>, which prevents sliding or sheering of the two parts C'. Over this strut at the front end there is a clamp C<sup>3</sup>, held onto said strut by solder C<sup>5</sup>.

In fire-extinguishers at present on the market the solder is depended upon to hold the strut together; but by my construction I do not rely upon the solder C<sup>2</sup> alone, but use the clamp C<sup>3</sup> to hold the strut together. Consequently the strut cannot separate and allow the water to flow out when there is no fire. In the present devices the two parts of the strut are apt to separate, due to time and non-use, and it has happened that the temperature has run up to 100° or so, which, with the force of the water, will produce a strain on the strut, causing a creeping or breaking away of said strut. This liability is removed by the addition of the clamp C<sup>3</sup>, soldered onto the strut. With the device set, say, at 160° or at any other predetermined temperature the strut will not separate until that temperature is reached, and when such temperature is reached the clamp will fall off, due to the melting of the solder, and the two parts will separate and the valve H will open and allow the water to flow from the main water-pipe A.

On the bottom of the set-screw F is a re-



volving distributor G, provided with slots G' and upwardly-turned vertical flanges G<sup>2</sup> G<sup>3</sup> and with outlets G<sup>4</sup>, as shown in Fig. 6. When the valve H is opened, as previously  
 5 described, the water flowing through the passage B' strikes the distributor G, causing the same to revolve and the water passes downwardly through the openings G' and laterally from the openings G<sup>4</sup> downward to the  
 10 fire. There is also provided a central flow of water through the passage F', which water passes down directly into the vicinity of the fire. The passage F' and the openings G' provide a direct downward flow of water, and  
 15 the movement of the distributor G with its flanges causes an upward and lateral discharge of the water, as indicated in Fig. 1.

The spring H<sup>3</sup>, located in a suitable recess in the upper part of the extinguisher C, bears  
 20 at its lower end against the valve H and assists in opening the valve when the strut is separated.

This extinguisher can be set for any temperature desired, which is regulated by different  
 25 solder, the higher temperature requiring harder solder than a lower temperature.

Having thus described the nature of my invention and set forth a construction embodying the same, what I claim as new, and desire to  
 30 secure by Letters Patent of the United States, is—

1. In an automatic fire-extinguisher, a water-supply pipe having a discharge-opening, a valve-seat formed in said discharge-opening,  
 35 a valve registering with said valve-seat, a sleeve opposite to said valve-seat, means for supporting said sleeve, a screw turned into said sleeve and provided with a longitudinal channel in line with said discharge-opening, a  
 40 strut composed of two members having opposite extensions on their inner ends respectively bearing against said valve and said screw, and fusible solder securing together the two members of said strut.

2. In an automatic fire-extinguisher, a water-supply pipe having a discharge-opening, a valve-seat formed in said discharge-opening, a valve registering with said valve-seat, a sleeve opposite to said valve-seat, means for  
 45 supporting said sleeve, a screw turned into said sleeve and provided with a longitudinal channel in line with said discharge-opening, a strut composed of two members having opposite extensions at their inner ends respectively  
 50 bearing against said valve and said screw, fusible solder securing together the two members of said strut, a pin seated in opposite recesses in the adjacent faces of the members of said strut, and a clamp soldered over the  
 55 outer ends of the members of said strut. 60

3. In an automatic fire-extinguisher, a water-supply pipe having a discharge-opening, a valve-seat formed in said discharge-opening, a valve registering with said valve-seat, a sleeve opposite to said valve-seat, means for  
 60 supporting said sleeve, a screw turned into said sleeve and provided with a longitudinal channel in line with said discharge-opening, a strut composed of two members having opposite extensions at their inner ends respectively  
 65 bearing against said valve and said screw, fusible solder securing together the two members of said strut, a pin seated in opposite recesses in the adjacent faces of the members of said strut, a clamp soldered over the outer  
 70 ends of the members of said strut, a distributor rotatable on said screw and having slots passing through the same, and upwardly-turned flanges provided with openings projecting from said distributor. 80

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 5th day of June, A. D. 1903.

CHARLES W. McDANIEL.

Witnesses:

A. L. NUSSER,  
 E. L. HARLON.