J. W. BISHOP.

Automatic Fire-Extinguisher.

No. 221,504. Patented Nov. 11, 1879.

FIG. 1

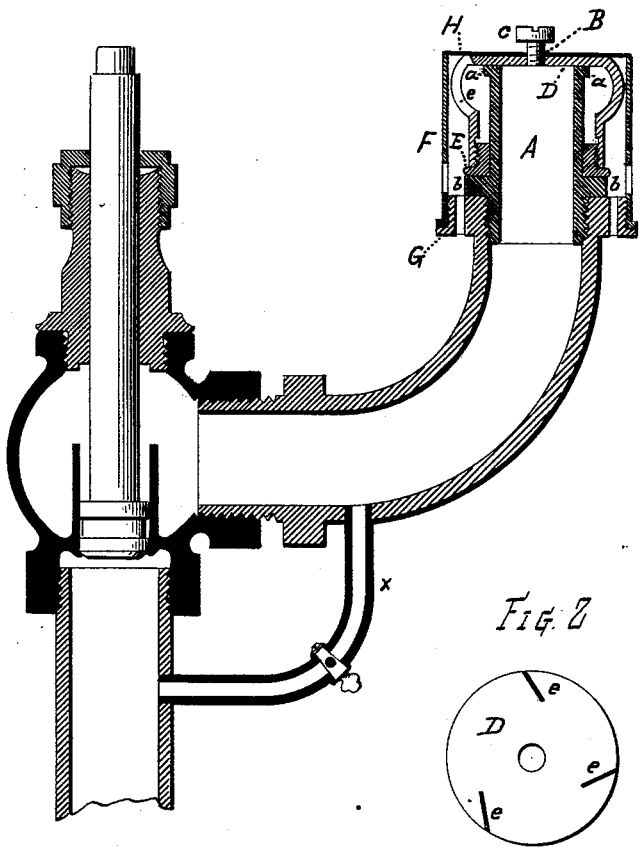
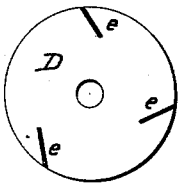


FIG. 2



WITNESSES

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JOHN W. BISHOP, OF NEW HAVEN, CONNECTICUT.

IMPROVEMENT IN AUTOMATIC FIRE-EXTINGUISHERS.

Specification forming part of Letters Patent No. **221,504**, dated November 11, 1879; application filed October 2, 1879.

To all whom it may concern:

Be it known that I, JOHN W. BISHOP, of New Haven, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Automatic Fire-Extinguishers, of which the following is a specification.

In the drawings, which I hereby make a part of this specification, Figure 1 is a vertical section of the fire-extinguisher and a fire-alarm arranged on the same conduit-pipe. Fig. 2 is a view of the upper and enlarged end of the distributer, showing the slots for the discharge of water.

My invention relates to automatic fire-extinguishers; and the improvements consist in fastening the distributer to the end of the conduit-pipe by a fusible material; in surrounding the distributer with a hollow cylinder having one of its ends covered with an inflammable cover; in an opening in the upper part of the extinguisher for the removal of air in the upper end of conduit-pipe when the extinguisher is used in connection with a fire-alarm, and in novel combinations, as the above are hereinafter more fully set forth and claimed.

To enable others to make and use my improved distributer, I will describe its parts and their operation.

A, Fig. 1, is a pipe having the enlargements *a a* and *b b*, and is screwed into the end of the conduit-pipe and forms a part of the same. The distributer D is made in the form shown, its upper end being enlarged, and is screwed onto the nut E, and provided with the slots *e*, (shown in Fig. 2.) It also has the orifice B, into which the screw *c* is turned to close it, and is fastened to the end of the pipe A by "fusible metal," as an alloy melting at a low temperature is called.

The alloy may consist of lead, tin, bismuth, and cadmium in different proportions.

Instead of fusible metal a cement suitable for holding pieces of metal together and melting at a low temperature may be used.

The fusible material being melted, the distributer is held on the conduit-pipe by the nut G and enlargements *a a* and *b b*, and is free to move on the pipe between these enlargements. The nut E is made in the form shown in the figure, and in two equal parts, and loosely fits on the pipe A between the enlargements, and is free to move between them. The hollow cylinder F is screwed to the enlargement G on the conduit-pipe, and is provided with a number of holes to admit air, as indicated by the omission of the lines representing cut surfaces. The enlargement G has holes for the same purpose, which are indicated in the same manner.

The cover H is made of inflammable material, and may be saturated with an inflammable substance to increase the heat as it burns and help to melt the material fastening the distributer to the end of the pipe. It rests on the hollow cylinder and has an orifice through which the screw *c* passes.

The fire-alarm shown in the drawings, and readily understood from the same, is introduced for the purpose of clearly showing the use and importance of the orifice B in the extinguisher. By means of this orifice and the pipe *x*, as shown, when an alarm and extinguisher are arranged on the same conduit-pipe, the air is let out of the pipe between the alarm and extinguisher and its place supplied with water, which, being non-elastic, prevents any disturbance of the alarm by the momentum of the water or "water-hammer," as it is sometimes called, created by the closing of a cock in any part of the conduit-pipe.

The parts of my extinguisher being described, its operation is readily understood. The fusible material fastening the distributer to the end of the pipe being melted, the pressure of the water forces the distributer upward until the nut E comes against the enlargement *a a*, when the slots *e* are above the hollow cylinder F, and the distributer rotates and throws the water as directed by the slots.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with the distributer D, constructed and arranged to throw water over a large space, of the hollow cylinder F, secured to the enlargement G on the conduit-pipe, and the inflammable cover H, to cover and protect the distributer, substantially as shown and set forth.

2. The combination, with the conduit-pipe

A, of the distributer D, constructed and arranged to throw water over a large space, fastened to the end of the conduit-pipe by a material fusible at a low temperature, and, the material being fused, held on the pipe by the nut E and enlargement *a a*, substantially as shown and set forth.

3. The hollow cylinder F, secured to the enlargement G on the conduit-pipe, in combination with the inflammable cover H, to cover and protect the distributer, substantially as shown and set forth.

4. In an automatic fire-extinguisher, the distributer D, constructed and arranged to throw water over a large space, fastened to the end of the conduit-pipe by a material fusible at a low temperature, and, the material being fused, held on the pipe by the nut E and enlargement *a a*, substantially as shown and set forth.

5. In an automatic fire-extinguisher arranged on the same conduit-pipe with a fire-alarm, the combination, with the orifice B, of the pipe *x*, to remove the air in the pipe between the alarm and extinguisher, and supply its place by water, to prevent, by the non-elasticity of the water, any disturbance of the alarm by the momentum of the water on closing a cock in any part of the conduit-pipe, substantially as and for the purpose set forth.

JOHN W. BISHOP.

Witnesses:
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