J. W. SMITH.

Combined Fire-Alarm and Fire-Extinguisher.

No. 220,674. Patented Oct. 14, 1879.

Fig. 1

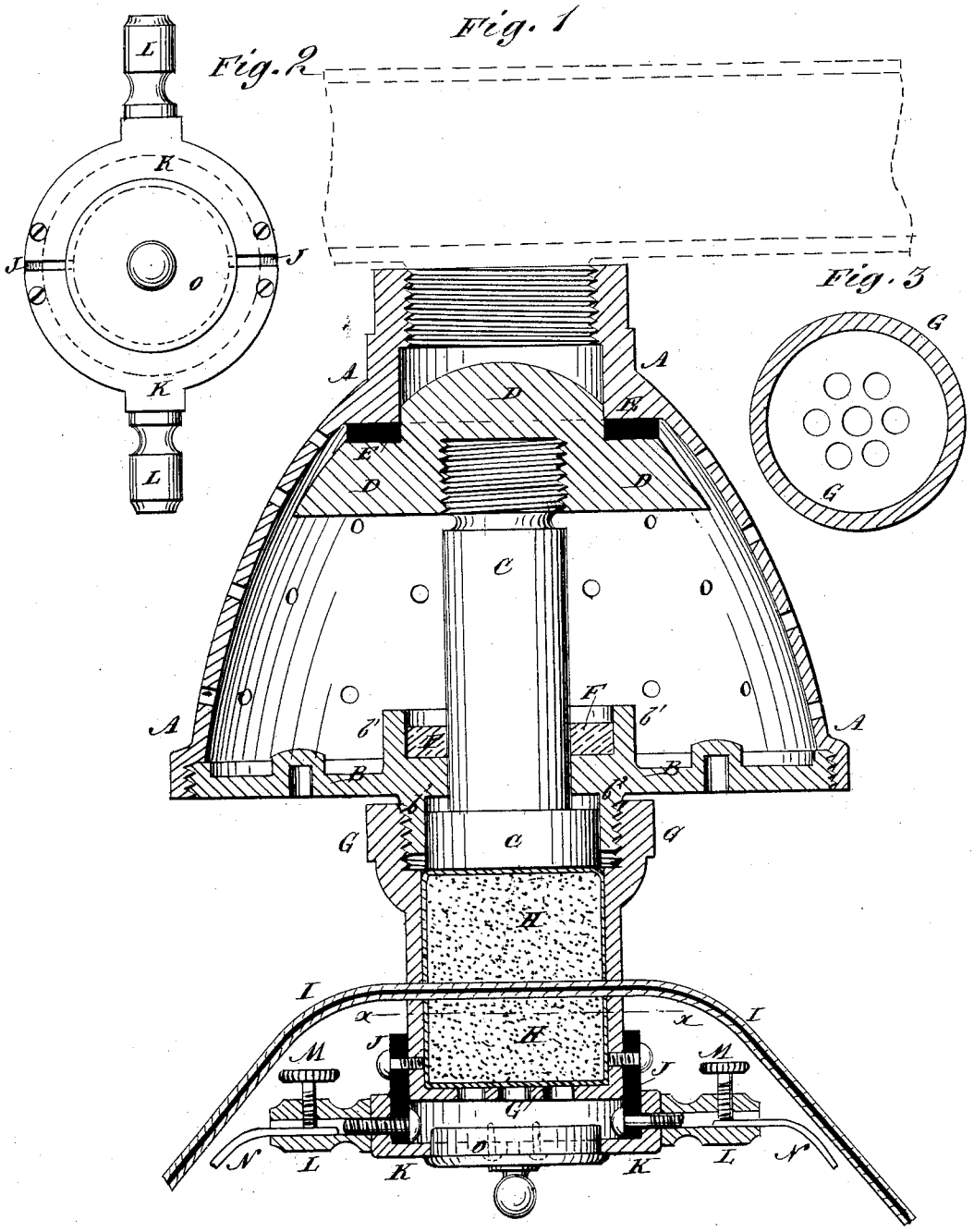

Fig. 2

Fig. 3

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JOHN W. SMITH, OF BROOKLYN, E. D., NEW YORK.

IMPROVEMENT IN COMBINED FIRE-ALARM AND FIRE-EXTINGUISHER.

Specification forming part of Letters Patent No. **220,674**, dated October 14, 1879; application filed August 2, 1879.

To all whom it may concern:

Be it known that I, JOHN W. SMITH, of Brooklyn, E. D., in the county of Kings and State of New York, have invented a new and useful Improvement in Combined Fire-Alarm and Fire-Extinguisher, of which the following is a specification.

Figure 1 is a vertical section of my improved device. Fig. 2 is a detail view of the lower end of the same, showing the circuit-closing and circuit-breaking device. Fig. 3 is a cross-section of the cartridge-chamber, taken through the line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts.

The object of this invention is to furnish an improved device, to be connected with a system of water-pipes in a building, which shall be so constructed that should a fire occur the fire itself will open a vent for the water where the fire is, and in no other place, and at the same time will sound an alarm, and which shall be simple in construction, inexpensive in manufacture, conveniently applied, and reliable and effective in use.

The invention consists in the combination of the chamber, its bottom provided with the ring-flanges upon its inner and outer sides, the plug provided with the head, and the cartridge-chamber provided with a perforated bottom and holes in its side to receive a fuse with each other; and in the combination of the non-conducting ring, the insulated half-ring plates provided with holders for the circuit-wires, and the circuit-closing plug with each other and with the cartridge-chamber provided with a perforated bottom and holes in its side to receive a fuse, as hereinafter fully described.

A represents a chamber, which may be made in the shape of an inverted cup, as shown in the drawings, or cylindrical, or of any other suitable shape. The chamber A is connected at its top with a water-pipe, and its sides are perforated with numerous holes; or it may be connected with or form a part of a perforated pipe. The chamber A is closed by a bottom, B, having a screw-thread cut upon its edge to screw into a screw-thread cut in the inner surface of the edge of the said chamber A. In the center of the bottom B is formed a hole to receive the plug C, which has a screw-thread cut upon its upper end to screw into a screw-hole in the head D. The head D is so formed as to fit snugly into the upper part of the chamber A and close its inlet-opening. The upper part of the head D has a shoulder, recess, or groove formed in it to receive rubber or other suitable packing E, to be pressed against a corresponding shoulder in the upper part of the chamber A, and close the inlet-opening water-tight. Upon the inner and outer sides of the bottom B, around and at a little distance from the hole through its center, are formed ring-flanges b^1 b^2. The inner flange, b^1, forms a cup to receive a packing, F, of tallow around the plug C, to prevent any water or moisture that may get into the chamber A from working down around the said plug C into the cartridge-chamber G and dampening the cartridge H. The cartridge-chamber G has a screw-thread cut in the inner surface of its upper end, to fit upon the screw-thread cut in the outer surface of the ring-flange b^2. The bottom of the cartridge-chamber G has a number of holes formed through it, to allow the gases liberated by the explosion of the cartridge H to have free vent downward. In the sides of the cartridge-chamber G are formed holes to receive a fuse, I, and allow it to come in contact with the charge of the cartridge H. The fuse I is extended around, so that it may be ignited at once should a fire occur. To the lower part of the cartridge-chamber G is attached a ring or band, J, of hard rubber or other suitable non-conducting material, which extends below the bottom of the cartridge-chamber G, and has two half-ring plates, K, attached to its lower part, with their ends at such a distance apart, as shown in Fig. 2, that electricity cannot pass from one to the other. The half-ring plates K are thus insulated from each other and from the other parts of the device. The insulated half-ring plates K are provided with sockets L and set-screws M, or other suitable means to receive and hold the circuit-wires N of a battery. Into the circular space between the inner

edges of the half-ring plates K is fitted a plug, O, of some good conducting material, which thus closes the circuit.

The circuit-wires N are designed to be connected with an alarm placed in the office, or in any other desired place, where it will be readily and certainly held.

The plugs O also prevent any moisture from passing in through the holes in the bottom of the cartridge-chamber G and dampening the cartridge H.

So many of the devices should be used in each story that every part of the whole building may be within the range of the water discharged from the chamber A.

In using the device, the cartridge-chamber G should be screwed up upon the flange b^2 so firmly that the pressure of the cartridge H against the lower end of the plug C may hold the head D against the upper part of the chamber A so firmly as to resist any pressure of the water in the pipes.

With this construction, should a fire start, the fuse I will be ignited and the cartridge H exploded. The explosion of the cartridge H will blow out the plug O, breaking the circuit and sounding the alarm. At the same time the plug C and its head D will drop and uncover the inlet-opening of the chamber A, allowing the water to flow out and extinguish the fire.

When there is not sufficient water-pressure to do this, an engine or pump can be connected upon the outside of the building with the water-pipes, and the water forced into them, which water will be discharged through the chamber or chambers A where the fire may be, the others remaining closed, so that it will not be necessary for the firemen to break into the building to search for the fire, as the water will go to the right place, and at the same time the fire will not be increased by supplying it with a draft.

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

1. The combination of the chamber A, the bottom B, provided with the ring-flanges b^1 b^2, the plug C, provided with the head D, and the cartridge-chamber G, provided with a perforated bottom, B, and holes in its side to receive a fuse, with each other, substantially as herein shown and described.

2. The combination of the non-conducting ring J, the insulated half-ring plates K, provided with holders for the circuit-wires N, and the circuit-closing plug O with each other and with the cartridge-chamber G, provided with a perforated bottom and holes in its side to receive a fuse, substantially as herein shown and described.

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Witnesses:
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