SAMUEL M. LILLIE.

Improvement in Fire Extinguishers.

117,900. Patented August 8, 1871.

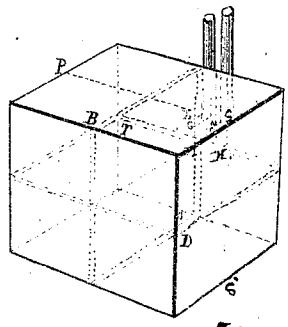


Fig. 1.

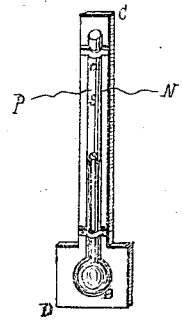


Fig. 5.

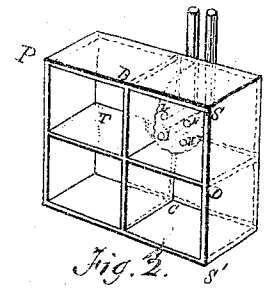


Fig. 2.

Fig. 3.

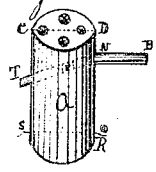


Fig. 6.

Fig. 4.

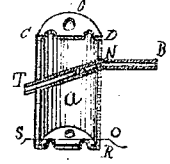
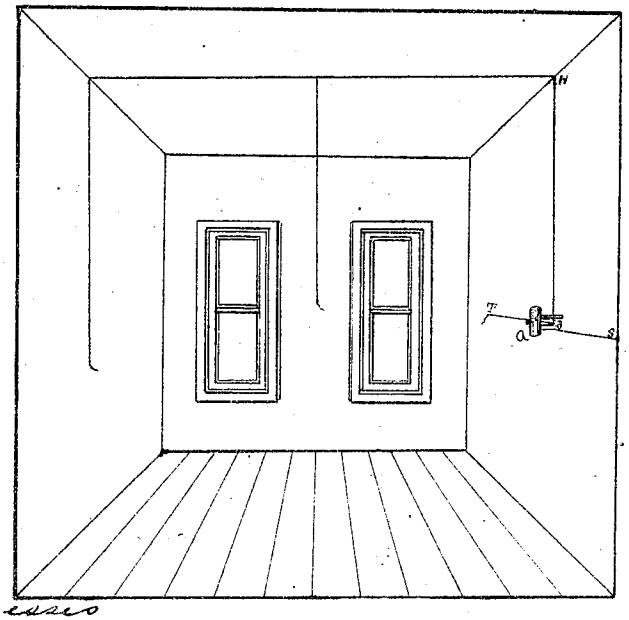


Fig. 7.



Witnesses
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UNITED STATES PATENT OFFICE.

SAMUEL MORRIS LILLIE, OF ELIZABETH, NEW JERSEY.

IMPROVEMENT IN FIRE-EXTINGUISHERS.

Specification forming part of Letters Patent No. 117,900, dated August 8, 1871.

To all whom it may concern:

Be it known that I, SAMUEL MORRIS LILLIE, of Elizabeth, in the county of Union and State of New Jersey, have invented certain Improvements in Fire-Extinguishers, of which the following is a specification:

The object of my invention is to furnish an automatic fire-extinguisher which will render it almost an impossibility for a fire originating in any room with which it is connected to damage the building or its contents to any great extent.

This is accomplished in the following manner: In a suitable position inside or outside of a building is located a reservoir containing as many compartments as there are rooms to be protected, said compartments being filled with some mephitic gas, as ammonia, carbonic acid, sulphurous acid, and the like, and each of which is connected with a room by means of a pipe having an outlet into the room. The outlet is closed by means of a fusible-metal plug, or by some other device which depends upon the melting of such a metal for the release of the gas. Each compartment contains a sufficient quantity of gas to render the atmosphere of the room with which it is connected non-supportive of combustion, if released therein. Instead of one large reservoir divided into a number compartments, there may be used a number of smaller reservoirs, one for each room or two, conveniently and suitably placed, connecting with the rooms as described above. When the gas is confined by fusible-metal plugs, or by some other device which releases the gas by the fusing of such a metal, the plug or device is surrounded by a small vessel which we will designate as the holder, the shape and construction of which may vary, but which contains some highly-inflammable material. Radiating from this holder to various parts of the room are fuses, some one or more of which, in case of fire in the room, would be soon ignited and in turn ignite the combustibles in the holder, which would fuse the metal, and the then escaping gas would extinguish the flames before they would be able to communicate with other parts of the building, and thus the great loss occasioned by flooding the building with water would be prevented.

In many cases, instead of the fuses I will use electricity in the following manner for igniting the inflammables in the holder: Have wires connecting with the poles of a battery form a connection at the holder with the extremities of a small platinum wire passing through the combustibles, and have a device so operating that for all temperatures below, say, 250° Fahrenheit, the circuit will be open, but at which, and for all above, it will be closed. Having placed these devices in different parts of the room, in case of fire a circuit would soon be closed; the platinum wire would become incandescent, setting fire to the inflammables, with the effect above stated.

In the place of the fusible plug or device I will substitute an apparatus charged with some explosive for closing the outlet of the pipe, which, on being exploded, will release the gas. In this case the holder would be dispensed with, the fuses and the platinum wire connecting with the powder directly.

In the accompanying drawing each part is designated by the same letter in the various figures.

Figure 1 is an outside view of the reservoir, showing the pipes leading from it. In the figure it is represented as being a cube, but it may have any other shape which may be more convenient.

Fig. 2 is a section of Fig. 1 cut through by the plane of the lines P S and S S′, showing the partitions B C and D T dividing the reservoir into four compartments. A portion of these partitions is broken away, so as to show the connection of the pipes with the different compartments, at L, N, H, and I.

Fig. 3 represents the holder, which consists, in this case, of a hollow cylindrical vessel whose ends are perforated to allow a supply of air for the support of combustion. Through this vessel A passes the gas-pipe B N T.

Fig. 4 is a section of Fig. 3 through the plane C D R. F is the fusible-metal plug sealing the pipe B N T. S O is the platinum wire with which the wires forming the circuit are connected. The holder A and plug F can be placed at any section of the pipe B N T, between its outlet and the reservoir.

Fig. 5 represents one kind of circuit-closer. It consists of a thermometer-tube, B A, open at the top, fastened to a back, D C, at S, and into opposite sides are fused wires N S and P S, extending into the inside of the tube. The whole apparatus is fastened in a perpendicular position. Enough mercury is poured into the tube so when at the desired temperature it will reach the wires N and P and close the circuit.

Fig. 6 represents an apparatus in which explosives are used for the release of the gas. It consists of a hollow cylindrical vessel, A B, which is filled with the explosive, through which passes the wire or fuse S T, as the case may be. A B is threaded, and screws into the end of the gas-pipe, leaving the end B and S T projecting. On the powder or other explosive being ignited the end of the pipe is burst and the gas escapes. Other methods for using explosives could be used for the purpose, against all of which I wish protection.

Fig. 7 shows the application of the invention to a room. A is the holder and pipe, with the fuses B S, B T, and B N radiating to different parts of the room.

I claim as my invention—

1. The application of a stationary reservoir or reservoirs with or without compartments connected with the various rooms of a building, as and for the purpose specified.

2. The application of fusible-metal plugs, or of devices depending on the fusing of such a metal, for the release of the gas or of any device charged with explosives to any pipe or reservoir of mephitic gas, excepting safes, for the purpose specified.

3. The application of a holder of combustibles and of fuses and electricity, as and for the purposes specified.

SAMUEL MORRIS LILLIE.

Witnesses:

D. P. HOLLOWAY,

C. F. CLAUSEN.