(No Model.)

J. MADDEN.

AUTOMATIC FIRE EXTINGUISHER.

No. 426,832. Patented Apr. 29, 1890.

Fig. 1.

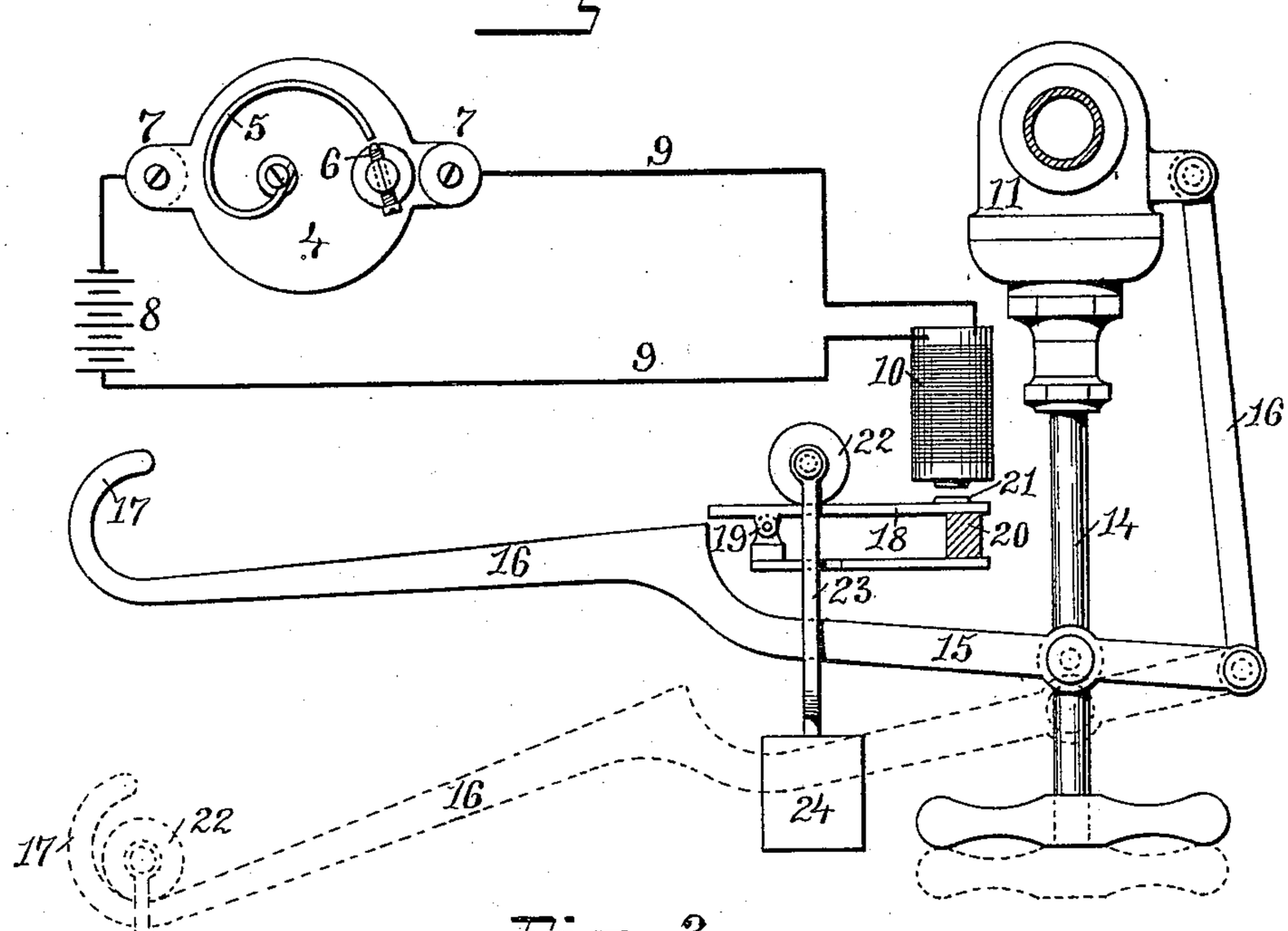
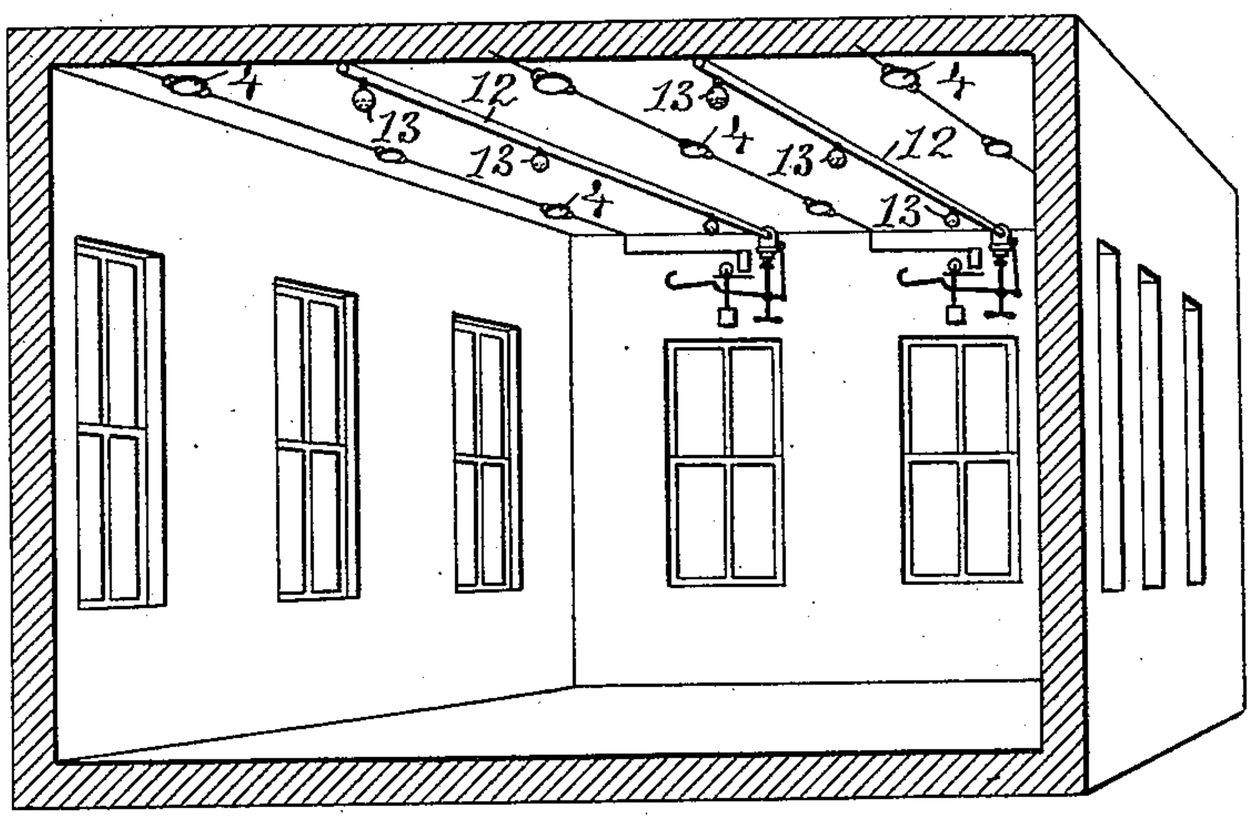


Fig. 2.



WITNESSES:

Chas. H. Luther Jr

William R. Blair.

INVENTOR.

Joseph Madden.

by Joseph A. Miller & Co.

Attys

UNITED STATES PATENT OFFICE.

JOSEPH MADDEN, OF PROVIDENCE, RHODE ISLAND.

AUTOMATIC FIRE-EXTINGUISHER.

SPECIFICATION forming part of Letters Patent No. 426,832, dated April 29, 1890.

Application filed December 24, 1889. Serial No. 334,850. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH MADDEN, of the city of Providence, in the county of Providence and State of Rhode Island, have invented a new and useful Improvement in Automatic Fire-Extinguishers; and I hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

This invention has reference to an improved device for protecting buildings against loss by fire; and it consists in a valve or valves located in each room, a pipe or pipes provided with sprinklers, a series of thermostats connected by conductor-wires with a battery and with an electro-magnet, so that when a fire starts in a room so protected the heat will close one or more of the thermostats, and by closing the circuit will energize the magnet and open the valve, as will be more fully set forth hereinafter.

Figure 1 is a view of the valve, the thermostat, the electro-magnet, and the connections. Fig. 2 is a perspective view of a room, showing the fire-extinguisher devices at the ceiling.

The object of this invention is to protect every room in a building with a fire-extinguishing device that will be so sensitive to heat that on a rise of temperature to a point which indicates that a fire has been started will instantly open a valve and admit water or other fire-extinguishing fluid to the part of the room where the fire is and extinguish the same automatically before the fire can spread or increase in volume.

Similar numbers of reference indicate corresponding parts in the drawings.

In the drawings the number 4 indicates a thermostat, which may be of any one of the well-known forms of thermostats in which a rise of temperature closes an electric circuit.

5 indicates a curved spring made of two metals which expand differently under a change in temperature.

6 is the adjustable contact-screw.

7 are the binding-posts.

8 indicates the battery; 9, the circuit-wires connecting the battery with the electro-magnet 10 and one side of the thermostat, and also the circuit-wire connecting the other side of the thermostat with the electro-magnet 10.

The gate-valve 11 is connected on one side with a supply-pipe and on the other side with the sprinkler pipe or pipes 12, to which the sprinklers 13 are secured. The gate is connected with the stem 14, and to this stem 14 the lever 15. One end of the lever 15 is connected with the link 16. The lever 15 is bent upward and provided with the inclined way 16, terminating in the hook 17.

Under the electro-magnet 10 the plate 18, pivoted at 19, is supported in a horizontal position by the block 20. The plate 18 is provided with the armature 21. The roller 22 has the stirrup 23 pivoted to its axis, the weight 24 being suspended from the stirrup 23.

The operation of the devices is as follows: The spring 5 being adjusted to close the circuit when the temperature is raised to a predetermined point, the electric energy will energize the electro-magnet 10, which will, by attracting the armature 21, raise the plate 18; the roll 22, with the stirrup 23 and weight 24, will run on to the inclined way 16 until it is arrested by the hook 17; the thus accelerated weight will draw down the stem 14 into the position shown in broken lines in Fig. 1; the water or other fire-extinguishing fluid will rush into the pipe thus opened, and will be discharged from the sprinklers 13 onto the fire at the very commencement of the fire and only at a point right over the fire.

Each room may be subdivided into as many parts as desired and each part provided with a separate set of thermostats, sprinklers, and valves, so that the water will only be discharged on the part in which the fire started.

Any one of the various well-known alarm-gongs may be connected with the circuit-wires 9, so that on the closing of a thermostat any predetermined alarm designating the place or division in which the fire has started may be sounded at the same instant with the opening of the valve.

The valve 11 is described as a gate-valve; but any other suitable valve may be used in connection with the sliding stem 14.

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

1. The combination, with the valve 11 and stem 14, of the lever 15, provided with the inclined way 16 and hook 17, the weight 24, supported on the axle of the roll 22, the plate 18, and an electro-magnet constructed to tilt the plate 18, as described.

2. The combination, with the valve 11 and the operating-lever 15, of the thermostat 4, the battery 8, the circuit-wires 9, electro-magnet 10, the plate 18, pivoted at 19, the armature 21, and the support 20, the roller 22, stirrup 23, and weight 24, constructed to turn on the water to the sprinkler-pipe automatically by the action of heat, as described.

JOSEPH MADDEN.

Witnesses:
J. A. MILLER, Jr.,
M. F. BLIGH.