

(No Model.)

A. McLAUGHLIN.

APPARATUS FOR PREVENTING FIRES IN ELEVATOR SHAFTS, &c.

No. 437,229.

Patented Sept. 30, 1890.

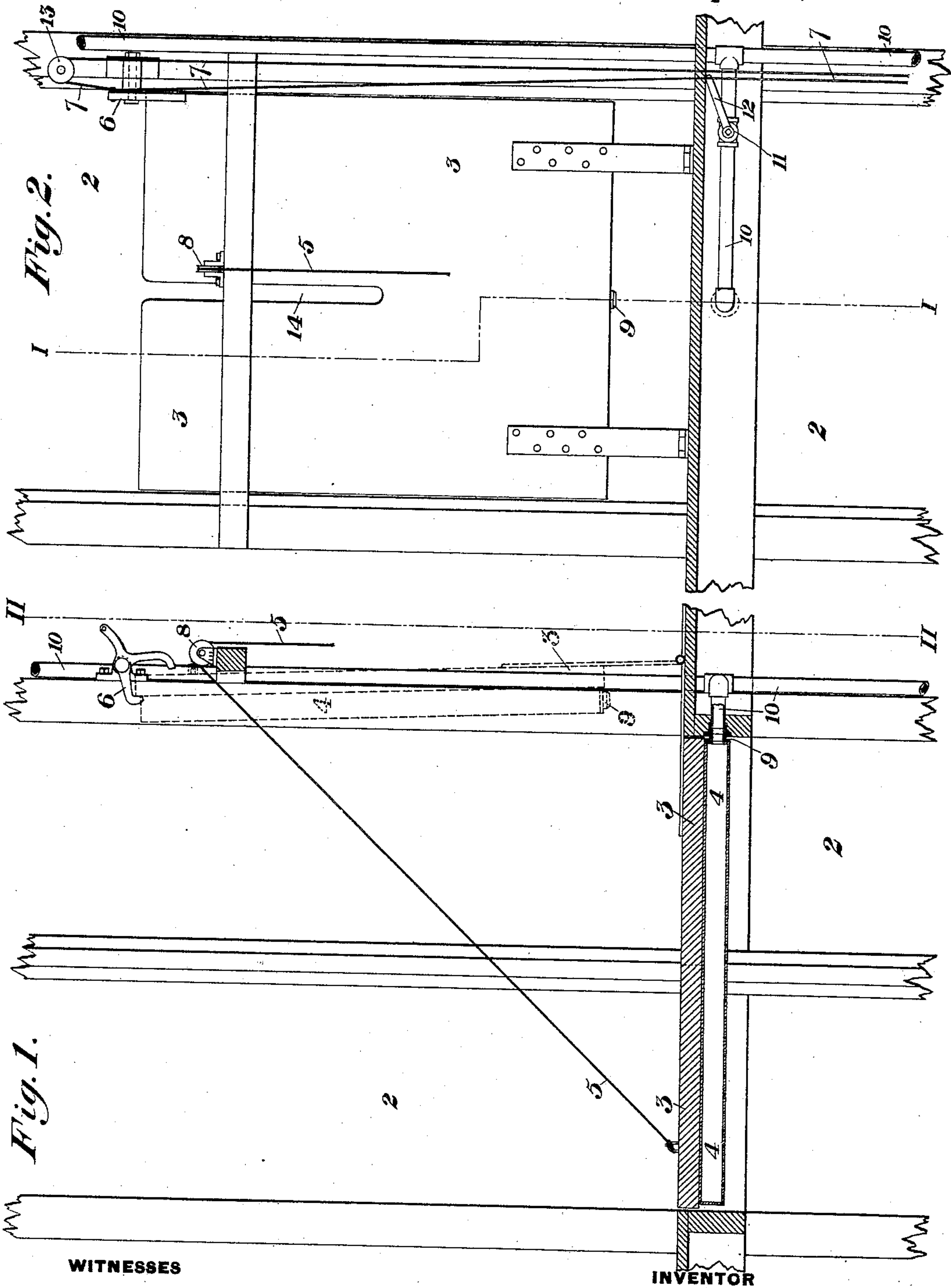


Fig. 1.

Fig. 2.

WITNESSES

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# UNITED STATES PATENT OFFICE.

ABRAHAM McLAUGHLIN, OF PITTSBURG, PENNSYLVANIA.

APPARATUS FOR PREVENTING FIRE IN ELEVATOR-SHAFTS, &c.

SPECIFICATION forming part of Letters Patent No. 437,229, dated September 30, 1890.

Application filed January 16, 1890. Serial No. 337,137. (No model.)

*To all whom it may concern:*

Be it known that, I ABRAHAM McLAUGHLIN, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Apparatus for Preventing Fires in Elevator-Shafts, &c., of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a vertical section of an elevator-shaft provided with my improvement, the section being on the line I I of Fig. 2. Fig. 2 is a vertical section on the line II II of Fig. 1. Like symbols of reference indicate like parts in each.

In the drawings, 2 represents an elevator-shaft.

3 is a trap-door or hatch, which is hinged at a convenient place in the shaft and which is provided with a hollow vessel 4, having on its under side a series of perforations. A coil of perforated pipe may be used as a substitute for the vessel. The door is hinged in such manner that it may be dropped to close the shaft, as shown in Fig. 1, so that in case of fire the shaft, being closed, may not serve as a flue to promote an updraft and to augment the fire. Normally the door is held in an upright position by a catch or trigger 6, which is provided with a cord 7 leading to a suitable place, on pulling which the catch may be moved to release the door and to permit it to drop into a horizontal position to close the shaft. The door may also be provided with a cord 5 passing over a pulley 8 and leading to the same place to afford means by which the door may be lowered gradually into place and may be raised thereof into an upright position. At the rear edge of the vessel 4 is a hollow nipple or pipe-connection 9, which, when the door is closed, makes connection with the mouth of a water-supply pipe 10. This pipe 10 is controlled by a valve 11, whose stem or lever 12 is provided with a cord by which it may be moved to permit the flow of water or to shut it off. For the sake of simplifying as much as possible the construction of the apparatus, the same cord 7 may be used to control both the catch 6 and the valve. For this purpose the cord is endless and passes

over a pulley 13, as shown in the drawings. The valve-stem or lever and the catch are so related to each other that a short pull of the cord will release the catch, but will not move the valve-stem or lever sufficiently to open the valve, while a further and longer pull on the cord will open the valve. The cords 5 and 7 preferably extend to the same place, so that they may be opened by one man. In the use of my improvement in a hotel the cords may lead to the main office, to be under the control of the clerk. It will be understood, however, that instead of the cords suitable electrical appliances with conducting-wires may be substituted.

There may be one of the hatches or trap-doors at each floor of the building, or at as many of the floors as may be desired, and it will be understood that when more than one of them is used each may be provided with the water appliances and controlling mechanism which I have described.

The operation of my improvement is as follows: On the happening of a fire in the elevator-shaft the operator, by means of the proper cord, releases the catch 6, thus permitting the door to drop and to close the shaft and to make connection between the vessel 4 and the supply-pipe 10. The valve 11 may then be opened so as to admit into the vessel 4 a stream of water, which, escaping from the perforations in a copious shower, will serve to drown the fire below. The water may be shut off or turned on as frequently as may be deemed necessary.

When the apparatus is used in connection with an elevator which is raised by means of a cable extending vertically through the shaft the door should be provided with a slot 14, which permits it in dropping to clear the cable.

The advantages of my improvement will be appreciated by those skilled in the art.

The apparatus is an efficient means for preventing the spread of fire in a building and in assisting to extinguish it, and as such is of great utility.

I am aware that it is not new to provide an elevator-shaft with a trap-door to cut off the draft in case of fire, but believe I am the first to use a drop-water-discharge vessel, or



to combine with such trap-door a water extinguishing apparatus of the nature described.

By the particular description of the construction and the arrangement of the parts which I have given above, I do not desire to limit the scope of my invention precisely thereto unless expressly so stated in the claims, since these may be varied by the skilled mechanic. For example, the form and the construction of the water-connections, of the door, and of the controlling devices may be changed.

While it is desirable that the hatch or door should be made as shown in the drawings, so as to close the shaft as much as possible, it will be understood that some of the advantages of my invention may be secured by employing a simple drop vessel or perforated pipe-coil, which may or may not close the entire shaft, the down-current of water in the shaft being relied on to prevent updraft and to extinguish the fire. It will be understood, also, that the apparatus may be used in connection with stairways, hatchways, and other openings in the floors of buildings, as well as with elevator-shafts.

I claim—

1. In an elevator-shaft, the combination of a water-vessel pivotally supported in the shaft and movable vertically into position in and across the shaft, means for so moving the water-vessel, a water-supply pipe, and a valve for controlling the same, substantially as and for the purposes described.

2. The combination of the door or hatch, a water vessel or pipe thereon, and a water-supply pipe with which communication is made on dropping the door or hatch, substantially as and for the purposes described.

3. The combination of the door or hatch, a water vessel or pipe thereon, a water-supply pipe with which communication is made on dropping the door or hatch, a valve, and means extending to a suitably remote point for controlling these parts, substantially as and for the purposes described.

In testimony whereof I have hereunto set my hand this 2d day of January, A. D. 1890.

ABRAHAM McLAUGHLIN.

Witnesses:

THOMAS W. BAKEWELL,  
R. H. WHITTLESEY.