

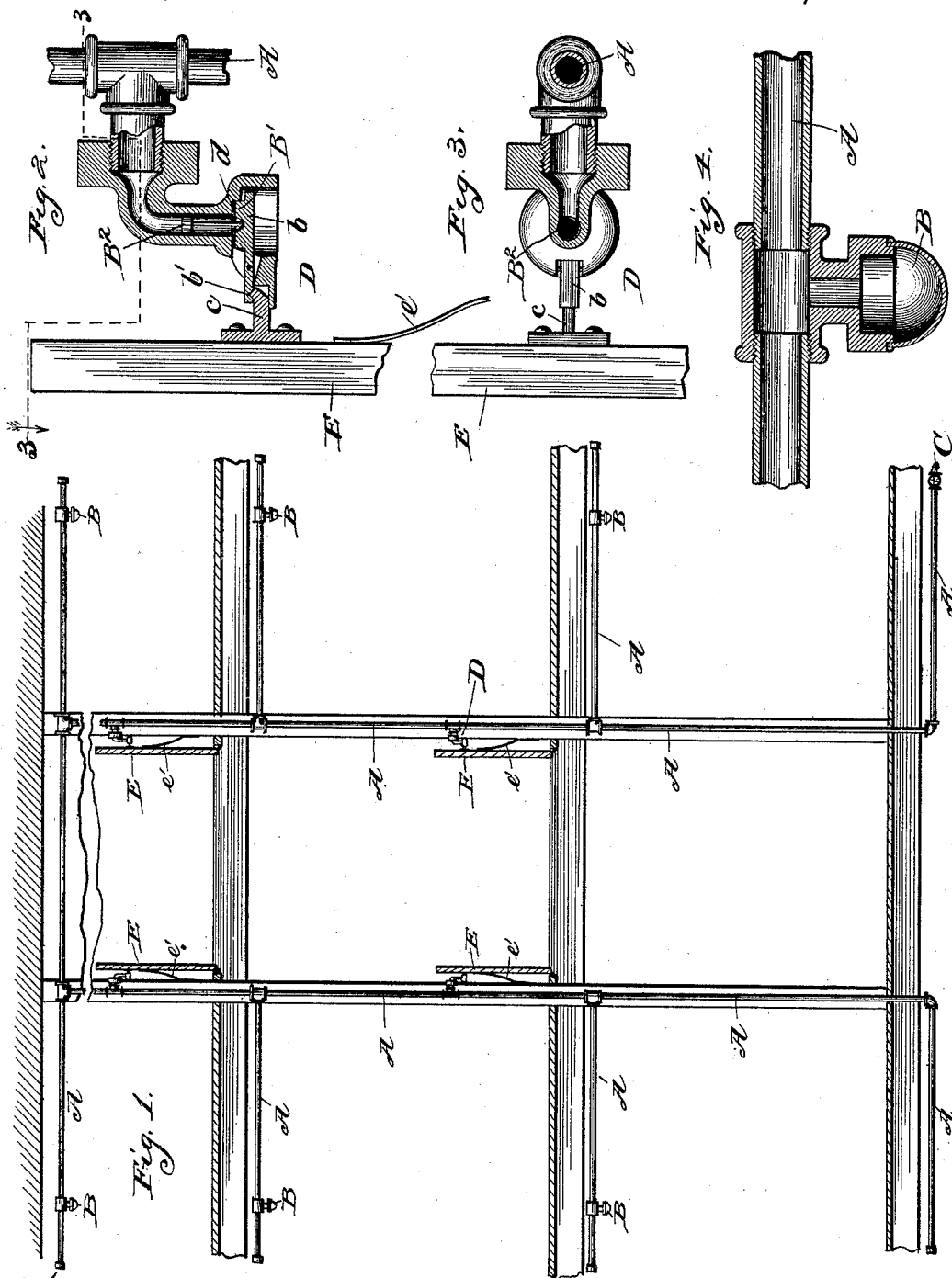
(No Model.)

C. F. BANKS.

AUTOMATIC HATCHWAY DOOR RELEASING DEVICE.

No. 466,819.

Patented Jan. 12, 1892.



Witnesses
W. C. Corlies
Martin H. Olsen.

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UNITED STATES PATENT OFFICE.

CHARLES F. BANKS, OF CHICAGO, ILLINOIS.

AUTOMATIC HATCHWAY-DOOR-RELEASING DEVICE.

SPECIFICATION forming part of Letters Patent No. 466,819, dated January 12, 1892.

Application filed April 1, 1891. Serial No. 387,200. (No model.)

To all whom it may concern:

Be it known that I, CHARLES F. BANKS, of the city of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Self-Acting Hatchway-Doors, of which the following is a specification.

The object of my invention is to provide elevator shafts and hatchways in buildings with doors that will close automatically when fire occurs in the building in which they are placed, and thereby prevent the spreading of the fire.

For a thorough understanding of my invention reference will be made to the accompanying drawings, in which—

Figure 1 represents a vertical section of an elevator-shaft, showing the doors hinged at opposite sides of the shaft and provided with a system of pipes, pneumatic latches, or detents, thermostatic bulbs, and a connection where a vacuum-pump can be applied. Fig. 2 is a side view, part in section and part in elevation, of a door and a pneumatic latch or detent. Fig. 3 is a plan sectional view of the same, taken at the line 3 3, Fig. 2. Fig. 4 is a sectional view of a thermostatic bulb in Fig. 1.

It will be seen that the pipes A ramify the various floors of the building in the region of the elevator-shaft and are provided at various points with openings covered with caps or bulbs B. The caps or bulbs B are so constructed as to melt when acted upon by an abnormal temperature and admit the air to the pipes A, from which the air has been extracted by means of a suction-pump applied at connection C. When the air is admitted through any of the bulbs B into the pipes A, when said bulbs are acted upon by heat, the suctional power exerted at the latches D is relaxed, and the latches, acting of their own volition, release the doors E, which fall to a horizontal position, covering the hatchway and cutting off the communication of the fire through the shaft.

In Fig. 2 it will be seen that the small catch c is fastened at one end to the door E, while its opposite end is engaged with a notch b' in the outer end of a lever b. The inner end of

lever b forms a valve B', which, when the air is extracted from the pipes A, is drawn by suction up against a valve-seat d, by means of a small piston B², where it is retained until the air is readmitted to the pipes A by the fire melting the fusible substance of the cap or bulb B, whereupon the suctional power exerted on valve B' is relaxed and the valve, which is a part of lever b, falls of its own weight, and thereby disengages catch c, leaving door E free, which is then thrown down to a horizontal position by a spring c', which is provided for that purpose.

In Fig. 4 the thermostatic bulb B is a conical shell made of a fusible substance, which, in a normal temperature, is strong enough to resist the suctional power of the vacuum created in pipes A; but when the said shell is acted upon by an abnormal heat it is melted and allows the air to enter the pipes A, the result of which is the object of this invention and has already been described. Other means of accomplishing this will be suggested to the inventive mind, such as employing compressed air instead of a vacuum in the pipes; but

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

The combination, with a hatchway-door having a catch thereon, of a latch-lever adapted to engage the catch and hold the door in its raised position, a sealed pipe from which the air is exhausted, having an opening therein, a fusible cap or bulb covering said opening, and a suction-valve connected to the latch-lever to hold said lever in engagement with the catch on the door, whereby when the temperature is unduly increased the cap or bulb is fused, the air-pressure is removed from the valve, the latch-lever released, and the hatch-door allowed to drop to close the opening of the elevator-well, all substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES F. BANKS.

Witnesses:

A. V. DARBY,
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