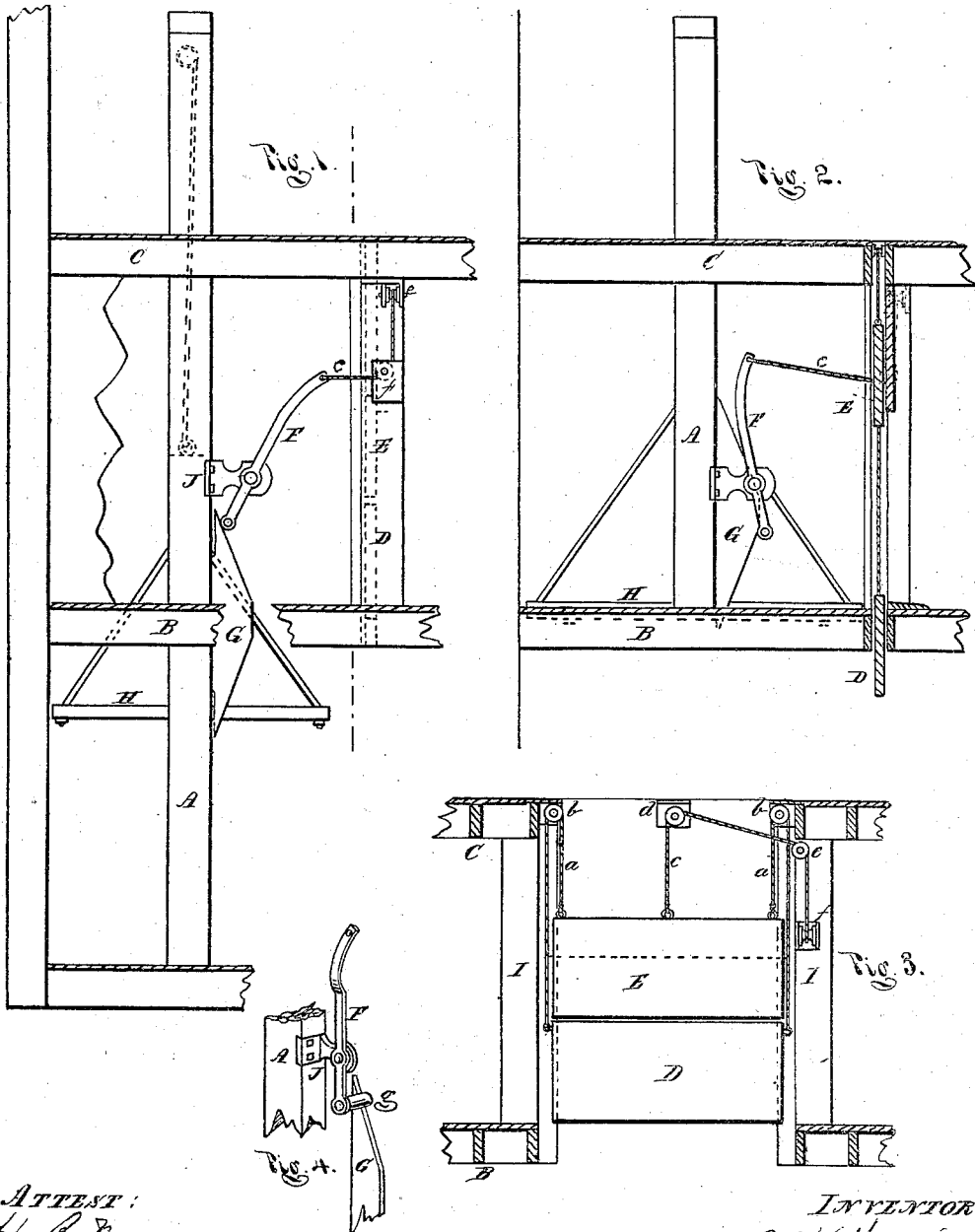


J. W. MEAKER.
Self-Closing Hatchways.

No. 147,853.

Patented Feb. 24, 1874.



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JOHN W. MEAKER, OF DETROIT, MICHIGAN.

IMPROVEMENT IN SELF-CLOSING HATCHWAYS.

Specification forming part of Letters Patent No. **147,853**, dated February 24, 1874; application filed October 30, 1873.

To all whom it may concern:

Be it known that I, JOHN W. MEAKER, of the city of Detroit, in the county of Wayne and State of Michigan, have invented new and useful Improvements in Doors for Inclosing Hoistways in Buildings; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which similar letters of reference indicate corresponding parts.

As is well known, the entrance to the car of inclosed hoistways, is generally through a single vertical sliding door, operated by hand, requiring the presence of an attendant to open it when the car arrives at the floor upon which it is located. As there are usually several floors in the building, some one of the doors is liable to be left open, and, as a consequence, the hatchways left unguarded, as well as a passage-way for heated air, and in case of fire of flame, from the lower to the upper stories.

The object of my invention is to guard the hatchways at all times, and to prevent the hoistways from becoming flues for carrying heated air or flame from the lower to the upper stories, by means of two half-doors of unequal weight, the lighter being suspended to and below the heavier in the doorways opening into the hoistway, and both arranged to slide vertically therein in opposite directions, so that when opened by hand, or automatically by the movement of the car, they will always close automatically when left free to move.

In the drawings, A represents one of the stiles or posts of the hoistway; B and C, two of the floors of the building through which the hoistway passes; H, the car; I I, the front posts or frame-work of the hoistway, between which the door or doors opening into the same are located. E and D are two half-doors, arranged to slide vertically in suitable grooves in the sides of the doorway I I, to and from a certain point midway in the same, so as to open and close the doorway, as shown in Fig. 3. They are suspended to and above each other by cords *a a*, passing over pulleys *b b*, and in such manner as to cause them to move in opposite directions, as shown in the same figure. The upper door, E, is made a little heavier than the lower one, D, in order that

its greater weight will cause them to come together automatically when left free to move, whether opened by hand or automatically by the movement of the car, as hereinafter explained. The opening by hand can be done at any time by simply raising the upper door, and this door can be held in any desirable position by a catch or other suitable device.

In order to have the doors opened and closed automatically by the motion of the car, and held open while the floor of the car is on a level with the floor of the building from which the doors open into the hoistway, a cam-plate, G, with sloping ends and a straight intermediate edge, is fastened in a vertical position to the frame of the car, as shown in Figs. 1 and 2. This cam actuates a swinging lever or arm, F, pivoted to a bracket, J, secured to the post A, or some other suitable part of the hoistway, which in turn, by means of a connecting-cord, *c*, passing over the pulleys *f*, *e*, and *d*, operates the doors, as shown in the same figures. The lever F is provided at its lower end with a pin, on which is placed a friction-roller, *f*, for the cam G to bear against, as shown in Fig. 4.

When the doors are closed, and the devices in the position shown in Fig. 1, it will be seen that as the car goes up the lower end of the lever will be swung forward, and its upper end backward, and the doors opened, as shown in Fig. 2, at which time the floor of the car will be on the same level with the floor of building. It will be further seen that the doors will remain open while the lower end of the lever is upon the cam between its sloping ends, but that as soon as the movement of the car, either up or down, allows the end of the lever to pass down either of the sloping ends of the cam, the doors will close.

During the movement of the car all of the doors opening into the hoistway are closed, except the one at which it happens to be. When the car is at the bottom of the hoistway, or at a point intermediate between the floors of the building, the hoistway is entirely closed. Thus, by the use of these devices, nearly all opportunity for the passage of air-currents from a lower to an upper story is cut off; but it may be rendered still more effectual, if desired, by covering the top of the hoistway.

In this way a cheap and simple door for inclosed hoistways is provided, serving both as a hatchway-guard and a closet, to be operated automatically by the approaching car, or by hand, at all times.

Having thus described my invention, what I claim is—

1. A door for inclosed hoistways, consisting of two parts of different weights, the lighter being suspended to and under the heavier, and

both arranged to operate substantially as herein described.

2. The combination of the cam G, lever F, and cord *c*, or its equivalent, with the doors D and E, when constructed and arranged to operate substantially as and for the purpose set forth.

Witnesses: JOHN W. MEAKER.
 JNO. GORING,
 J. W. CHESTER.