(No Model.)

2 Sheets—Sheet 1.

R. D. THACKSTON.

SELF CLOSING HATCHWAY.

No. 274,844. Patented Mar. 27, 1883.

Fig. 1.

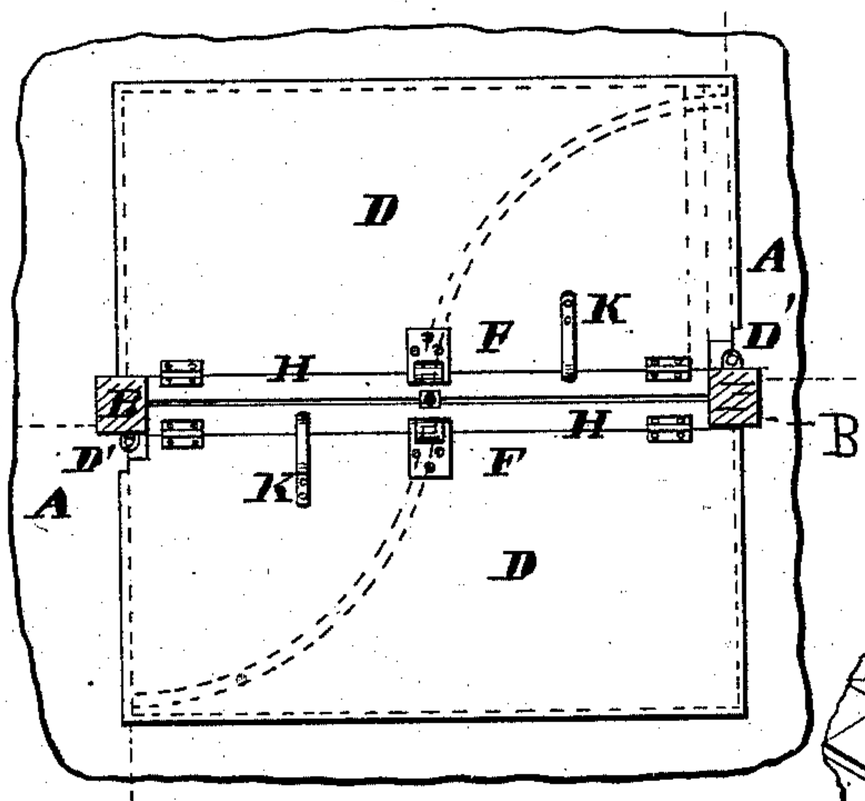

Fig. 4.

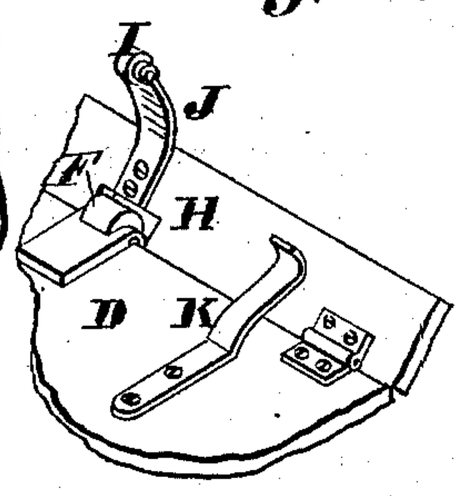

Fig. 3.

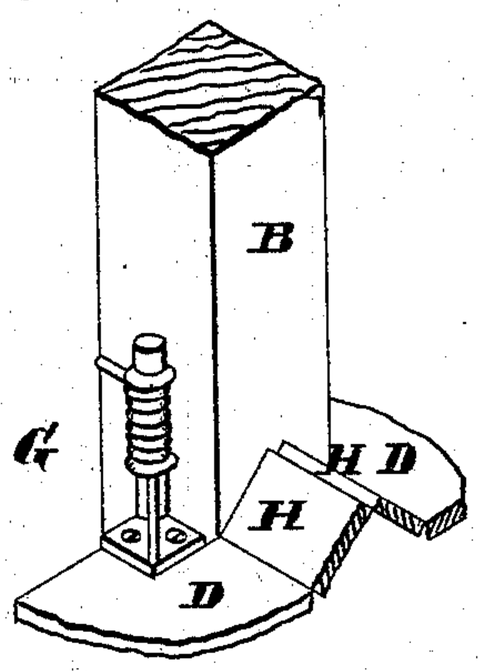

Fig. 2.

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Attys

(No Model.) 2 Sheets—Sheet 2.

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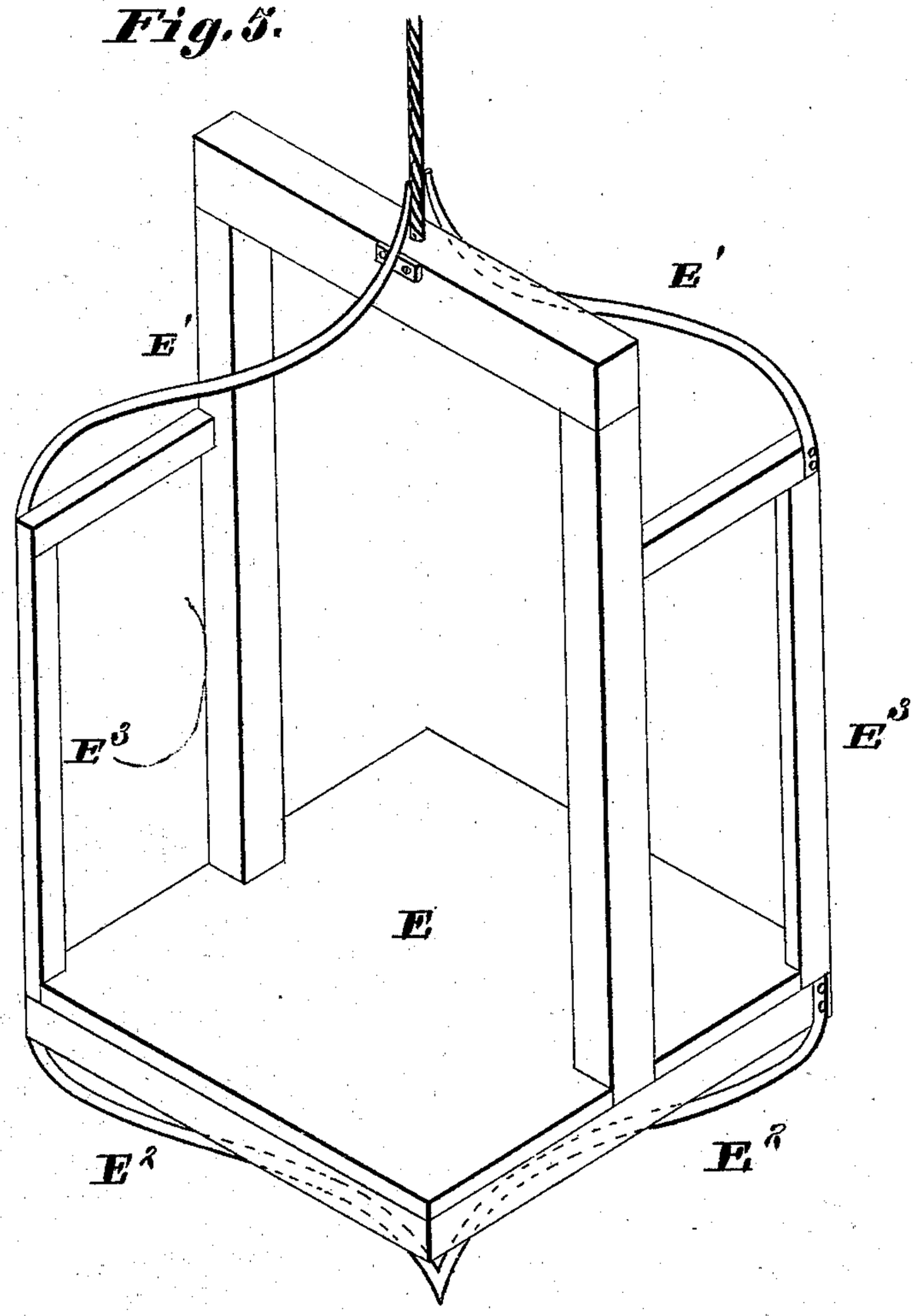
Fig. 3.



Attest;
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Wm. F. Sayers.

Inventor;
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UNITED STATES PATENT OFFICE.

RICHARD D. THACKSTON, OF ST. LOUIS, MISSOURI, ASSIGNOR OF ONE-HALF TO HENRY I. COE, OF SAME PLACE.

SELF-CLOSING HATCHWAY.

SPECIFICATION forming part of Letters Patent No. 274,844, dated March 27, 1883.

Application filed November 20, 1882. (No model.)

To all whom it may concern:

Be it known that I, RICHARD D. THACKSTON, of the city of St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in Self-Closing Hatchways, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, and in which—

Figure 1 is a top view of the doors. Fig. 2 is a vertical section, showing the cage in side elevation. Fig. 3 is a detail perspective view, illustrating a manner of forcing the doors shut after they have been opened by the cage. Fig. 4 is an enlarged detail perspective view, showing one of the leaves or flaps for closing the space between the doors proper. Fig. 5 is an enlarged perspective view of the cage, illustrating a form of cams for opening the doors.

My invention relates to hatchway-doors which are self closing, for elevators; and my invention consists, broadly, in hinging or pivoting the doors by one corner to the uprights of the elevator, or to the floor of the building, or to any other suitable object, in combination with suitable cams on the elevator-cage for forcing the doors open, and suitable means for forcing the doors shut after the cage has passed, as more fully described hereinafter.

Referring to the drawings, A represents part of a floor of a building; B B, the uprights of the elevator, and C the hatchway. The hatchway is provided with doors D D, which are hinged or pivoted at D′ to the uprights B, respectively, or they may be hinged to the floor A, or to any other suitable object. The doors, thus being hinged by their corners, open, when forced upon by suitable cams secured to the cage, in a circle, requiring much less power than is necessary to open either vertically-moving doors or horizontally-moving doors where they have to be moved bodily. The open position of the doors is shown by dotted lines, Fig. 1.

E′ E′ are cams secured to the top of the cage E, to open the doors on the ascent of the cage; and E^2 E^2 are similar cams, secured to the bottom of the cage, to open the doors on the descent of the cage. The cams extend from the center of the cage to the outer corners, or near the corners, the lower ends of the upper cams being secured to posts E^3 E^3, which hold the doors open as the cage passes through the hatchway. The doors are provided with friction-rollers F F, (see Fig. 1,) against which the cams strike and bear in opening the doors, and in fast-running elevators these rollers may have springs placed behind them, if desired. When the cage has passed the doors are closed by any suitable means. I have shown common door-springs G.

I have shown the doors on top of the floor, but they may be placed beneath it; and I have shown them hinged to opposite sides of the hatchway, but they may be hinged to the same side, the cams on the cage, of course, being located to suit.

When the doors are closed there is necessarily a space between them on account of the uprights B B. This space I close by means of leaves or flaps H H, hinged to the doors, so as to be inclined when closed, as shown in Fig. 3. As the cage approaches the floor the cams first open these leaves upward, which clears them from the uprights B B, and then the cams come in contact with and swing the doors open. The wings preferably have friction-rollers I secured to the upper ends of spring-arms J, (see Fig. 4,) against which the cams would bear. The leaves are held closed by means of suitable springs, K, when not pressed open by the cams.

One of these improved doors may be used with a door of common construction, and in that case the common door could cover the space between the uprights and the leaf on the other door could be dispensed with.

I claim as my invention—

1. In a self-closing hatchway, a door pivoted at one corner, so as to be swung in a horizontal plane to open or close the hatchway, as set forth.

2. In a self-closing hatchway, a pair of doors, each pivoted at one inner corner, so as to be swung open, as set forth.

3. In a self-closing hatchway, the door or doors hinged or pivoted at one corner, so as to be swung open, in combination with suitable

cams on the elevator-cage, and a suitable means for forcing the door or doors shut after the cage has passed, substantially as set forth.

4. In a self-closing hatchway, the combination, with the doors hinged or pivoted at one corner, of the hinged wings or flaps, provided with suitable springs to hold them shut except when opened by the cams on the cage, substantially as set forth.

5. In a self-closing hatchway, the combination of hinged doors D, hinged leaves H, provided with springs K and rollers I on arms J, springs G and cams E′ and E^2 and posts E^3 on the cage E, all substantially as set forth.

RICHARD D. THACKSTON.

Witnesses:

SAML. KNIGHT,

GEO. H. KNIGHT.