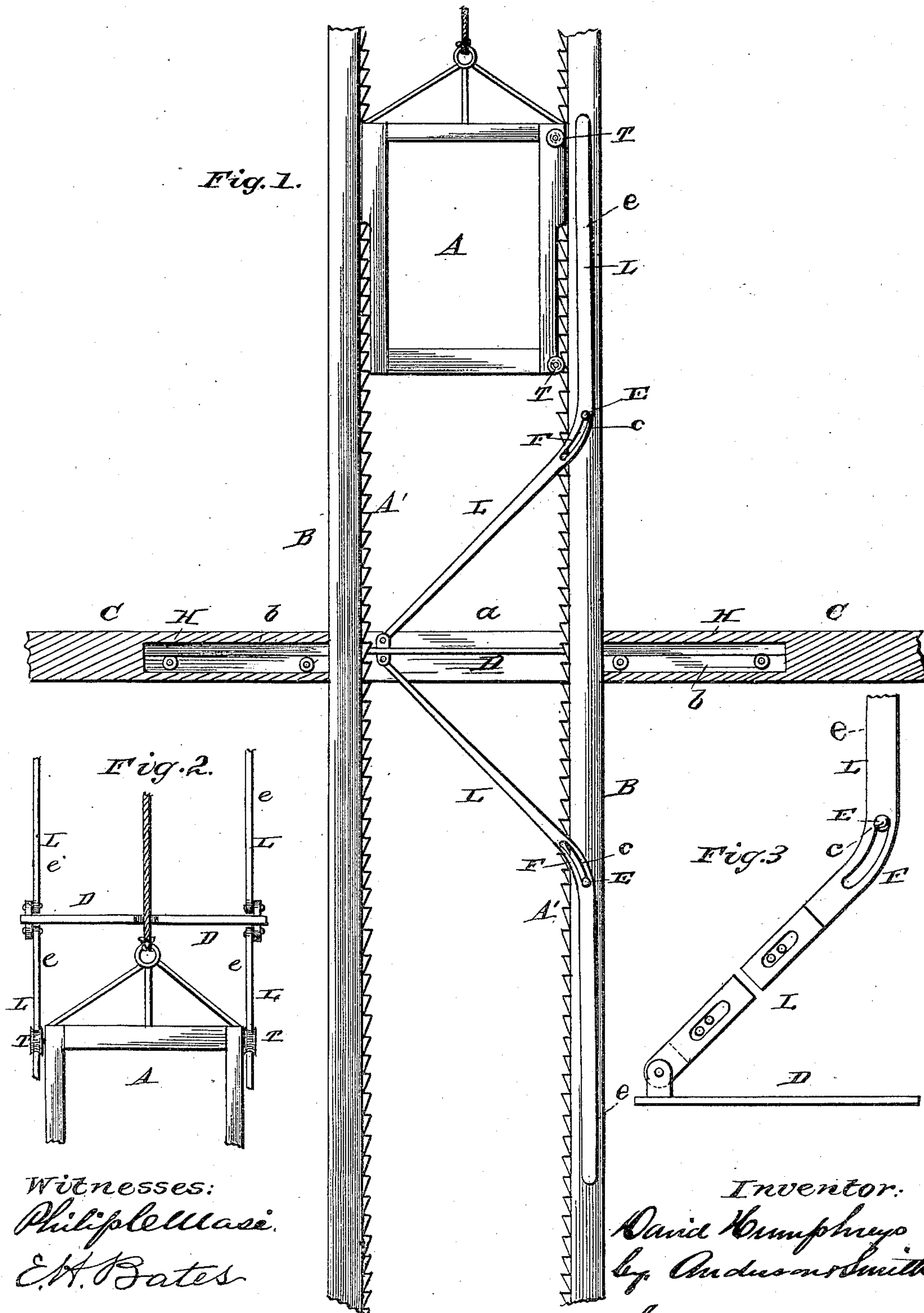


(No Model.)

D. HUMPHREYS.  
SELF CLOSING HATCHWAY.

No. 286,136.

Patented Oct. 2, 1883.



Witnesses:  
*Philip Massi.*  
*E. H. Bates*

Inventor:  
*David Humphreys*  
by *Andrus & Smith*  
*his* Attorneys.



# UNITED STATES PATENT OFFICE.

DAVID HUMPHREYS, OF NORFOLK, VIRGINIA, ASSIGNOR TO ARTHUR C. HUMPHREYS, OF SAME PLACE.

## SELF-CLOSING HATCHWAY.

SPECIFICATION forming part of Letters Patent No. 286,136, dated October 2, 1883.

Application filed September 2, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, DAVID HUMPHREYS, a citizen of the United States, and a resident of Norfolk, in the county of Norfolk and State of Virginia, have invented a new and valuable Improvement in Self-Closing Hatchways; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a vertical sectional view of my device. Figs. 2 and 3 are detail views.

This invention has relation to devices for automatically opening and closing the well-hole of a hoisting apparatus or elevator; and the invention consists in the construction and novel arrangement of the horizontally-reciprocating platform or platform-sections, the slotted bent levers pivoted to the frame-work of the elevator-way, the sliding connections of said slotted bent levers, and the horizontal grooves or guides of the platform, all as hereinafter set forth.

In the accompanying drawings, the letter A designates an elevator-car or vertically-moving platform arranged in the vertical way A', which is constructed with upright framing B, of suitable strength to support the apparatus.

C represents the floor and ceiling or horizontal partition between two stories of a building in which the elevator is placed. In this partition, alongside the opening or well-hole *a*, is formed a recess or recesses, *b*, extending horizontally, and provided with grooves or guides H, designed to be furnished usually with anti-friction rollers, and serving to engage the edges of the horizontally-reciprocating platform or platform-sections, as indicated at D. The platform is a light but strong structure, of wood or metal, which, when thrown out from its recess *b*, will move across the well-hole and close it, the same being opened when the platform is moved horizontally into its recess, so that the way is left clear for the elevator-car.

L L indicate bent metallic bars or levers, which are flattened from side to side at their

middle or bent portions, *c*, which are connected to the framing of the elevator-way by strong pivots E. Each well-hole is provided with a set of levers above and a set of levers below its plane, the upper levers being connected to the platform D by their lower ends or arms, and the lower levers to said platform by their upper ends or arms, as indicated in the drawings. By means of these levers the platform is moved back and forth horizontally, and in order to provide for the vertical play of each lever a sliding connection is made by slotting the lever in its middle or pivot portion *c*, the slotted bearing thus formed moving on the pivot E, which it engages, thus forming a sliding connection, as at F; or the sliding connection may be made at the end of the lever, where it is connected to the platform, the end of the lever passing through a perforated bearing of said platform.

The elevator-car is provided with grooved wheels or bearings T, marginally arranged at its top and bottom to engage the free arms *e* of the levers L when the car is moving toward or from the well-hole. On the downward movement of the car the lower pin, T, will engage the lower arm of the upper lever, causing it to vibrate from the oblique into the vertical position, and thereby to move the platform D from the well-hole into its recess, so that the car can pass down. In continuing the downward movement from the well-hole the lower bearing, T, of the car engages the lower arm of the lower lever and causes it to vibrate, thereby throwing its upper arm outward from the vertical into the oblique position, carrying the platform D across the well-hole to close the same. During the upward movement of the car the upper bearing will engage the respective upper arms of the levers, also opening and closing the well-hole by automatically moving the platform from or over the same.

Usually the bearings T of the car will consist of grooved rollers on suitable axle-pins, which will engage the lever-arms, tracking the same.

In some constructions it may be advisable to make that arm of each lever which is pivoted to the platform in two parts, both slotted and connected by bolts in such a manner that



a sliding motion will be set up between the two parts so connected when this arm of the lever is moving from the vertical to the oblique position, or in the opposite direction. If a single platform is employed, it should have an opening extending from its edge inward past its center, to provide for the free movement of the rope or cable by which the car is operated. If two half-sections are used, edge notches may be made in the middle of each meeting edge with the same object in view. These meeting edges should be flanged to engage each other.

A hatchway provided with double doors arranged to slide to and from each other, and to be operated by the elevator, which in ascending and descending comes in contact with levers fulcrumed to the framing and connected with the said doors, so that the door ahead of the elevator is opened and the one behind closed simultaneously by the movement of the elevator, has been used prior to my invention, and I do not therefore claim, broadly, such a construction.

Having described this invention, what I claim, and desire to secure by Letters Patent, is—

1. The slotted bent levers L, pivoted to the frame of the elevator-way, having free arms *e*, and arms connected to a horizontally-reciprocating platform, or to platform-sections, and sliding connections *e* E, to provide for the vertical play, substantially as specified.

2. The combination, with an elevator car or platform and its way, of a recessed horizontal partition between the stories of a building, having horizontal guides, a horizontally-reciprocating platform, and the slotted bent levers L, pivoted to the upright framing B, substantially as specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of witnesses.

DAVID HUMPHREYS.

Witnesses:

WILLIAM HANNAH BROUGHTON,  
W. H. BROUGHTON,  
ARTHUR CAMERON HUMPHREYS.