

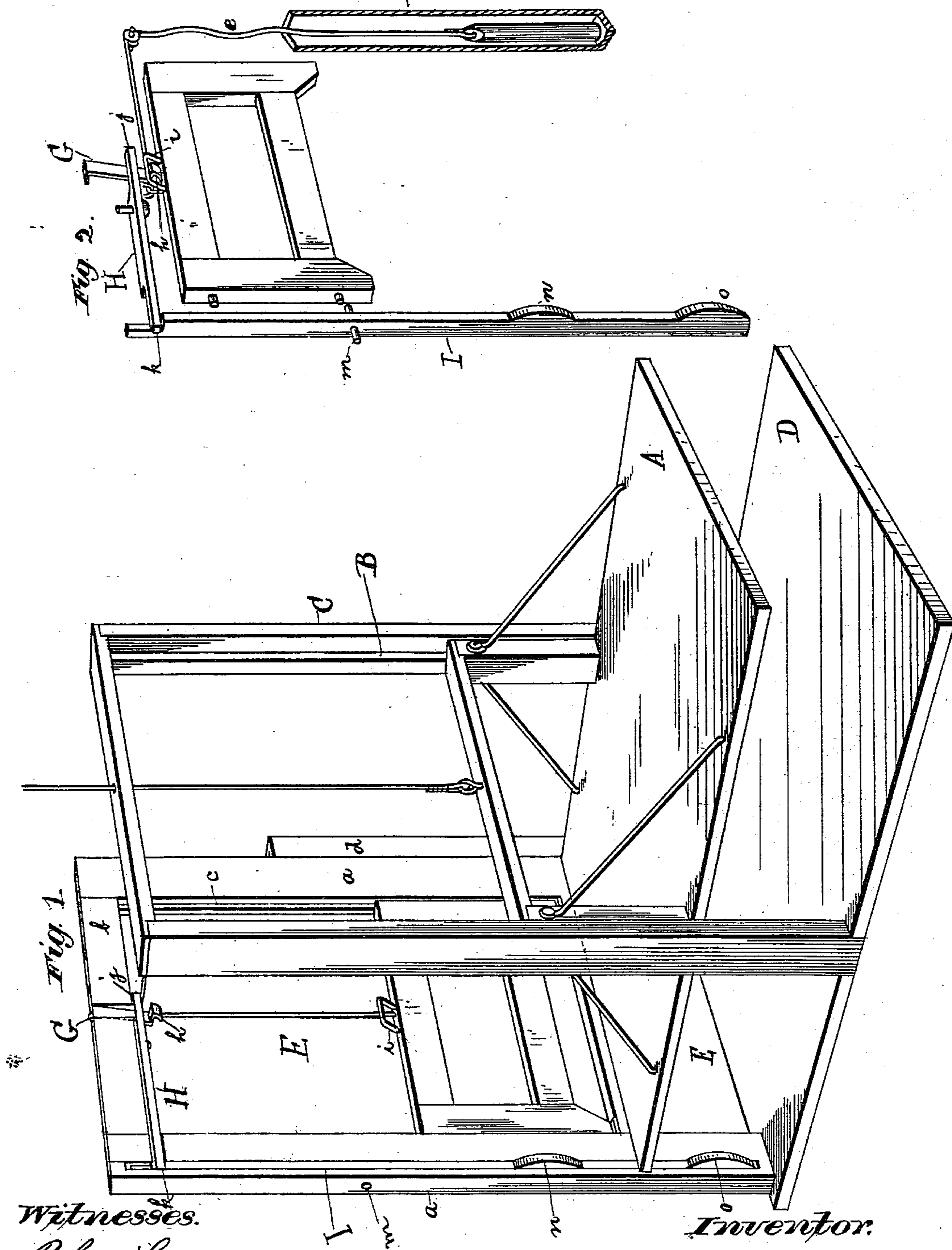
(No Model.)

W. H. IVERS.

SAFETY GATE FOR ELEVATORS.

No. 272,552.

Patented Feb. 20, 1883.



Witnesses.

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SAFETY-GATE FOR ELEVATORS.

SPECIFICATION forming part of Letters Patent No. 272,552, dated February 20, 1883.

Application filed October 17, 1882. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM HENRY IVERS, a citizen of the United States, residing at Dedham, in the county of Norfolk and State of Massachusetts, have invented certain new and useful Improvements in Safety-Gates for Elevators; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

This invention relates to means for automatically closing the doors of elevator-wells; and it consists mainly in the combination, with a doorway of a well and a vertically-sliding door for closing the same, of a spring-catch secured to the upper part of each doorway to suspend said door above the landing, and an upright lever pivoted to one side of the door-frame, and a latch intermediate between the catch and the lever, the arrangement of the whole being such that as the elevator-car passes the landing, either in ascending or descending, it actuates the lever and latch and releases the door, which falls by its own gravity to close the doorway.

My invention incidentally consists in the disposition of the counterbalance-weight and door with respect to the landing and the support of the weight, whereby the hoist rope or chain of said door is left slack when the door is open, in order that such door may begin its descent rapidly and acquire a momentum at the start, thereby to allow of the use of a heavier weight, and hence slower descent of the gate.

The drawings accompanying this specification represent, in Figure 1, a perspective view of mechanism embodying my invention, and in Fig. 2 a detail perspective view of the gate, its cord, suspending-catch, and devices for releasing the same.

In said drawings, A denotes the platform of a freight-elevator designed for the hoisting of goods in warehouses and other localities, or it may be the floor of a passenger-car, such platform being guided in vertical paths of movement by upright ways or guides B B in verti-

cal posts C C, making part of the structure containing the elevator. A landing of the said structure is shown at D and a doorway of said landing at E, the side bars of such doorway being shown at *a a* and its top bar at *b*, the door sliding in vertical ways *c c* in said side bars. A counterbalancing-weight is contained in a box, *d*, erected at one side the door-frame, the weight being connected with the top of the door by a cord, *e*, passing over suitable pulleys. I employ the weight for the same purpose as in elevators in general—that is, to partially counterbalance the car or platform—and, in order that I may be enabled to increase this weight to the highest practical point, I provide a hoist-rope of such length relatively to the bottom of the box *d* and the landing D that when the door is suspended at its highest point the cord is slack. Under these circumstances when the door is released it falls a short distance unimpeded by the weight, thereby allowing it to acquire a certain momentum to overcome the inertia of such weight, and enabling the latter to be increased considerably and speed decreased.

G in the drawings represents a spring-catch depending from the top bar, *b*, of the doorway, the lower and free end of this catch terminating in a head or hook, *h*, to automatically engage a staple or eye, *i*, secured to the top of the door when the latter is raised or opened to its highest point.

H in said drawings represents a horizontal latch-bar, pivoted somewhat near its center to the under side of the bar *b* of the doorway, the nose *j* of this latch-bar abutting against the catch G, while its tail *k* abuts against the upper end of a vertical lever, I, contained within a recess in one of the side bars of the doorway, such lever I being pivoted within such recess at about its center by a horizontal pivot, *m*. The outer face of the lever I is practically flush with that of the bar *a* containing it, and upon the lower part of such lever, and protruding beyond the face of such bar *a*, I form two crowning swells, *n o*, one of which stands immediately above the top of the platform A and the other immediately below it, when such platform is in a plane with the landing D. The normal position of the door is of course closed. As the platform in ascend-

ing arrives on a plane with the landing the attendant seizes the door and raises it to its highest point, which causes its eye *i* to engage the hook *h*, and the door remains suspended.

- 5 As the platform proceeds on its way in either direction it wipes against one or the other of the swells *n o* of the lever *I*, thereby swinging such lever on its pivot, and in so doing effects a corresponding movement of the latch-bar *A*,
10 which disengages the hook of the catch from the eye *i* and allows the door to drop and close the doorway.

I claim—

1. The combination, with the platform, doorway, and door, of the lever *I*, with its swells
15 *n o*, the latch-bar *H*, pivoted to the upper part

of the doorway, and the spring-catch *G*, operating automatically to uphold the door, and released by the movement of the latch-bar, substantially as explained. 20

2. The combination of the hoisting-rope and its weight with the weight-box, platform, doorway, and door, said rope being of such length relative to the aforesaid parts that it will remain slack when the door is open, as set forth. 25

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM HENRY IVERS.

Witnesses:

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