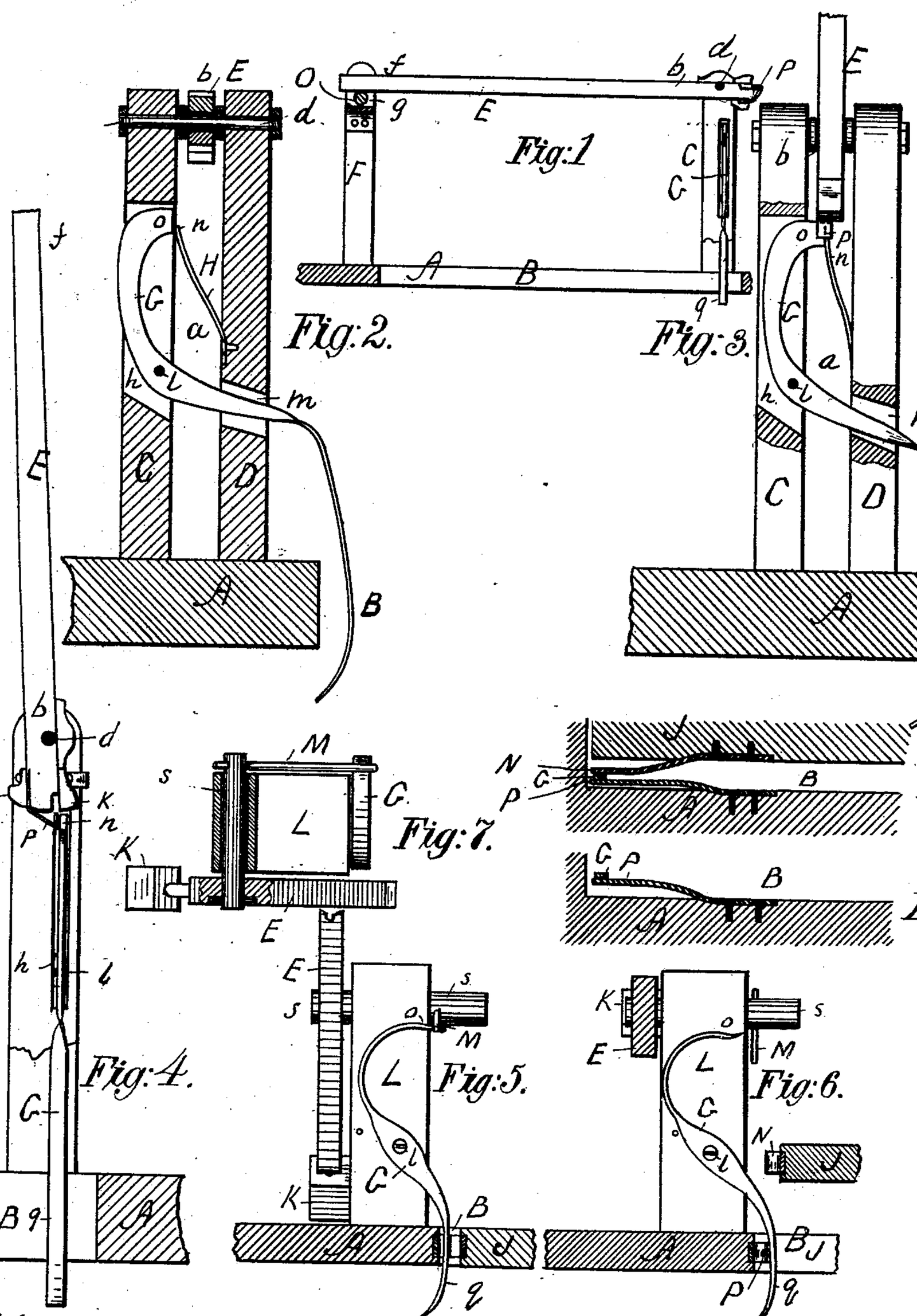
(No Model.)

# E. G. KENDALL.

## Self Closing Hatchway Guard.

No. 234,042. Patented Nov. 2, 1880.




Witnesses

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# UNITED STATES PATENT OFFICE.

EDWARD G. KENDALL, OF BOSTON, MASSACHUSETTS.

## SELF-CLOSING HATCHWAY-GUARD.

SPECIFICATION forming part of Letters Patent No. 234,042, dated November 2, 1880.

Application filed September 6, 1880. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD G. KENDALL, of the city of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Self-Closing Guards for Hatchways, of which the following is a full, clear, and exact description.

This invention relates to the automatic closing of a guard or gate to an elevator hatchway or opening by means of an arrangement of parts operated by the elevator as it moves up or down, to or away, from the floor on which the guard is located, all substantially as hereinafter fully described.

In the accompanying plate of drawings this invention is illustrated, Figure 1 being a view, in elevation, of the guard or gate as closed, looking from the hatchway-opening, which is in section; Figs. 2, 3, and 4, sectional views in detail; Figs. 5, 6, 7, 8, and 9, views, in detail, showing a modification.

In the drawings, A represents the floor of a building, and B the opening or hatchway in which the elevator travels up and down. C and D are two upright posts rigidly fixed to the floor at one corner of the hatchway or opening B. In the space *a* between the posts C and D swings, in a vertical plane, a bar, E, pivoted at one end, *b*, to the posts C and D at *d*. This bar E is the guard or gate to the side of the hatchway-opening to which it is applied, and when serving as such lies in a horizontal position, as shown in Fig. 1 more particularly, its end *f* resting in a groove, *g*, in a post, F, on the same side of the opening B, but at the opposite corner. The other three sides of the hatchway-opening B are protected by a permanent guard, as a railing or a fence, or in any manner desired.

G is a lever, swinging in a groove, *h*, in the post C, on a pivot, *l*, and extending through an opening, *m*, in the post D down into the hatchway-opening a short distance below the floor A, as shown in the drawings. A spring, H, by one end secured to post D, bears, by its free end *n*, against the upper end, *o*, of lever G. On the end *b* of the guard E is a spring catch or projection, *p*.

J represents, in vertical section, one end of an elevator-platform. When the elevator-platform is at a floor having this invention attached thereto its platform J presses against the lower arm of the lever G, swinging it on its pivot *l*, so that its upper end, *o*, will project into the space *a*, and against which end the guard E, when swung up into a vertical position, will abut by its projection P and thereby be held in such position. As the elevator-platform leaves the floor in either going up or down and passes, the arm ceasing to act thereon, the lever G is forced back by the spring H freeing the catch P, the guard E is free to and will fall to a horizontal position, which it does by its own weight, to adjust the speed of which a weight, K, is attached to its pivot end, and can be regulated, as desired, for the proper fall of the guard E.

Operating a guard to a hatchway-opening substantially as described secures the closing of the hatchway-opening so that it cannot be left unguarded, as it might be if not operated automatically by the elevator, as described, independent of any attendant. The catch P is of a spring form, so that if the guard should be raised after the lever G is operated by the elevator-platform it would allow of the catch passing by the end of the lever to hold the guard up.

In Figs. 5, 6, 7, 8, and 9 is shown, in detail, a modification of this invention, the parts being substantially reversed in their operation.

L is the post, and E the guard pivoted thereto at *s*, on the end of which pivot is an arm, M, which, when the elevator-platform J is at the floor, rests upon the upper end, *o*, of the lever G, which is a similar lever to the lever in the other views, and is thrown forward at such end by the elevator-platform pressing its lower arm, as before, and when the elevator-platform is moved either up or down the lever G is relieved and is then swung back by a spring, P, arranged in the edge of floor A, freeing the arm M and allowing the guard F to fall.

A spring, N, is arranged in the edge of platform J to abut, by its free end, against the lower arm, *q*, of the lever G, instead of the edge of the platform itself. An india-rubber cushion, O, is placed in the groove *g* in post F to receive the end of guard E in its fall, and, if desired, two vertical spring-arms, into and

between the open ends of which the end *f* of the guard can fall and hold it against rebound, can be used.

With such an arrangement of a guard to a hatchway-opening all liability of persons accidentally falling down the opening is obviated; for if the guard should be up it is sure to fall if the elevator-platform leaves the floor, and if the guard should be raised by any person when the elevator-platform is not at the floor it will not stay up itself, consequently a sure and effectual self-closing guard to a hatchway-opening is the result of the present invention.

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

1. In combination with an elevator-platform, a swinging guard, E, pivoted near the hatchway-opening, a lever having one end arranged to engage with said guard, and its other end standing in the path of the platform, said lever being normally out of engagement with the guard and thrown into engagement therewith by the action of the platform, substantially as described.

2. In combination with an elevator-platform, a guard, E, pivoted to a post near the hatchway-opening having a spring-catch, P, and lever G, and spring H, all arranged for operation substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

EDWARD G. KENDALL.

Witnesses:
GEORGE PARKER,
EDWIN W. BROWN.