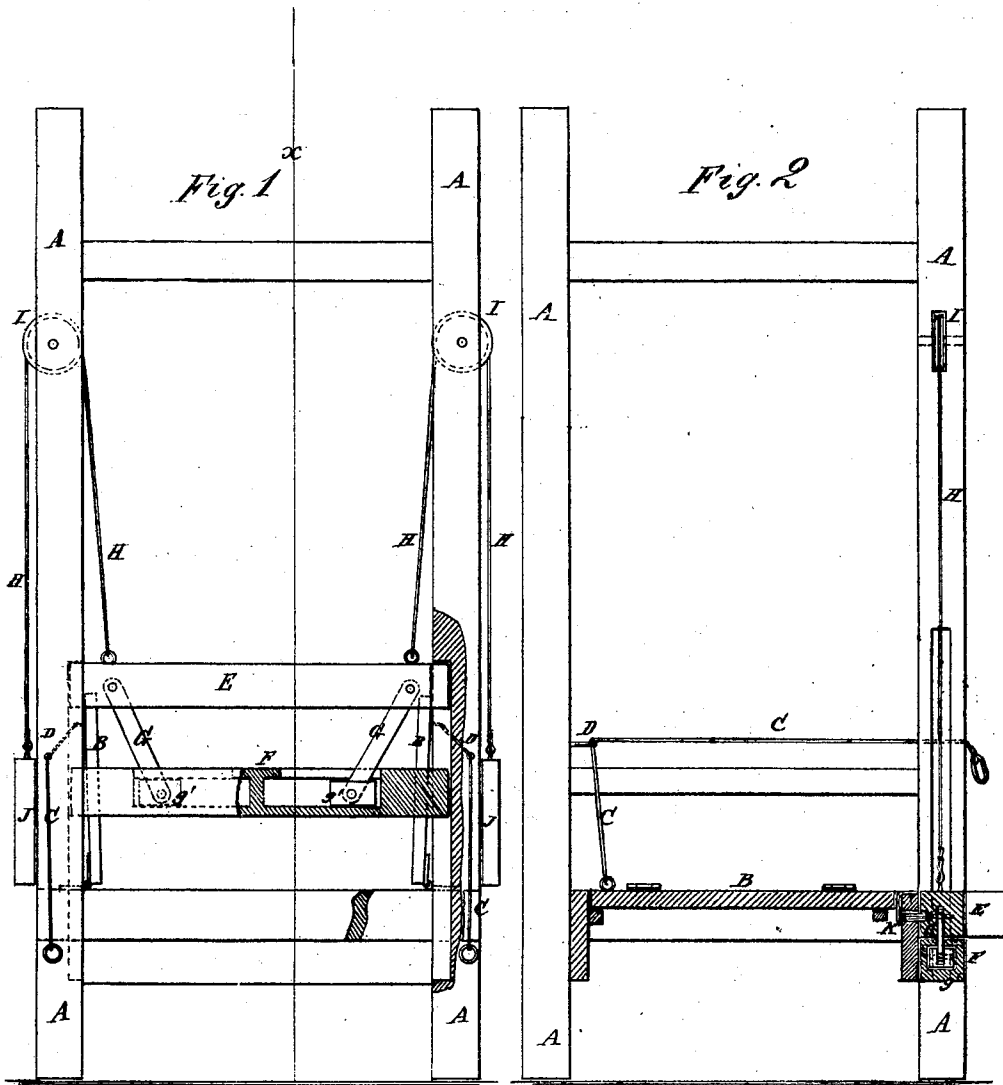


E. H. BALL.

Improvement in Hatchway-Guards.

No. 128,523.

Patented July 2, 1872.



Witnesses:

*A. W. Almgvist*  
*W. A. Graham*

Inventor:

*Edward H. Ball*

PER *[Signature]*  
Attorneys.

# UNITED STATES PATENT OFFICE.

EDWARD H. BALL, OF NEW YORK, N. Y.

## IMPROVEMENT IN HATCHWAY-GUARDS.

Specification forming part of Letters Patent No. 128,523, dated July 2, 1872.

Specification describing a new and useful Improvement in Hatchway-Guard, invented by EDWARD H. BALL, of New York city, in the county and State of New York.

In the accompanying drawing, Figure 1 is a front view of my improved hatchway-guard, part being broken away to show the construction. Fig. 2 is a detail sectional view of the same taken through the line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts.

My invention has for its object to furnish an improved guard for elevator and other hatchways which shall be so constructed as to rise into position automatically as the hatches are opened and remain raised until again forced down out of the way; and it consists in the construction and combination of the various parts, as hereinafter more fully described.

A represents the frame-work of the hatchway or elevator-well. B are the hatches, which are hinged to the floor timbers or frame A in the ordinary manner. To the hatches B, near their free edges, are attached the ends of ropes or cords C, which pass around guide-pulleys or through guide-eyes D attached to the frame A or the wall of the building, and project, as shown in Figs. 1 and 2, so that, by pulling upon the ends of the ropes or cords C, the hatches B may be conveniently raised. By this construction, by attaching the ends of the ropes or cords C to ropes running the entire length of the elevator-well, the hatches may be opened upon all the floors at the same time and by one operation. E F are two bars the ends of which work in grooves or ways in the posts of the frame A, and which are connected with each other by two bars, G, the upper ends of which are pivoted to the upper bar E and the lower ends of which are pivoted to blocks, pins, or rollers *g'*, which slide in grooves or slots in the lower bar F, as shown in Figs. 1 and 2. By this construction, when the guard is raised the bars E

F separate, as shown in Fig. 1, and when lowered the said bars E F come together so as to enter a recess formed in the floor to receive them, as shown in Fig. 2, the slots in the lower bar F being made of such a length and so arranged that the bars G can never become so erect that the blocks, pins, or rollers *g'* will not slide in their grooves as the guard is pushed downward. To the upper bar E, near its ends, are attached the ends of two ropes, H, which pass over guide-pulleys I pivoted to the posts of the frame A, and to their other ends are attached weights J, sufficient in size to overbalance the weight of the guard E F G and raise it automatically as soon as the guard has been released by raising the hatches B. The guard E F G is secured in place, when lowered, by a spring-bolt, K, which is forced forward to enter a hole in the upper bar E by the hatch B, and which releases itself by its own elasticity as soon as the hatch B is raised, so that the said guard E F G will always rise as the hatches are opened.

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

1. The arrangement of the cords C with respect to the hatches B and frame A, substantially as herein shown and described, and for the purpose set forth.

2. The guard E F G, ropes H, and weights J, constructed and arranged in connection with the hatches B and frame A, substantially as herein shown and described, and for the purpose set forth.

3. The combination of the spring-bolt K with the guard E F G and hatches B, substantially as herein shown and described, and for the purpose set forth.

EDWARD H. BALL.

Witnesses:

JAMES T. GRAHAM,  
T. B. MOSHER.