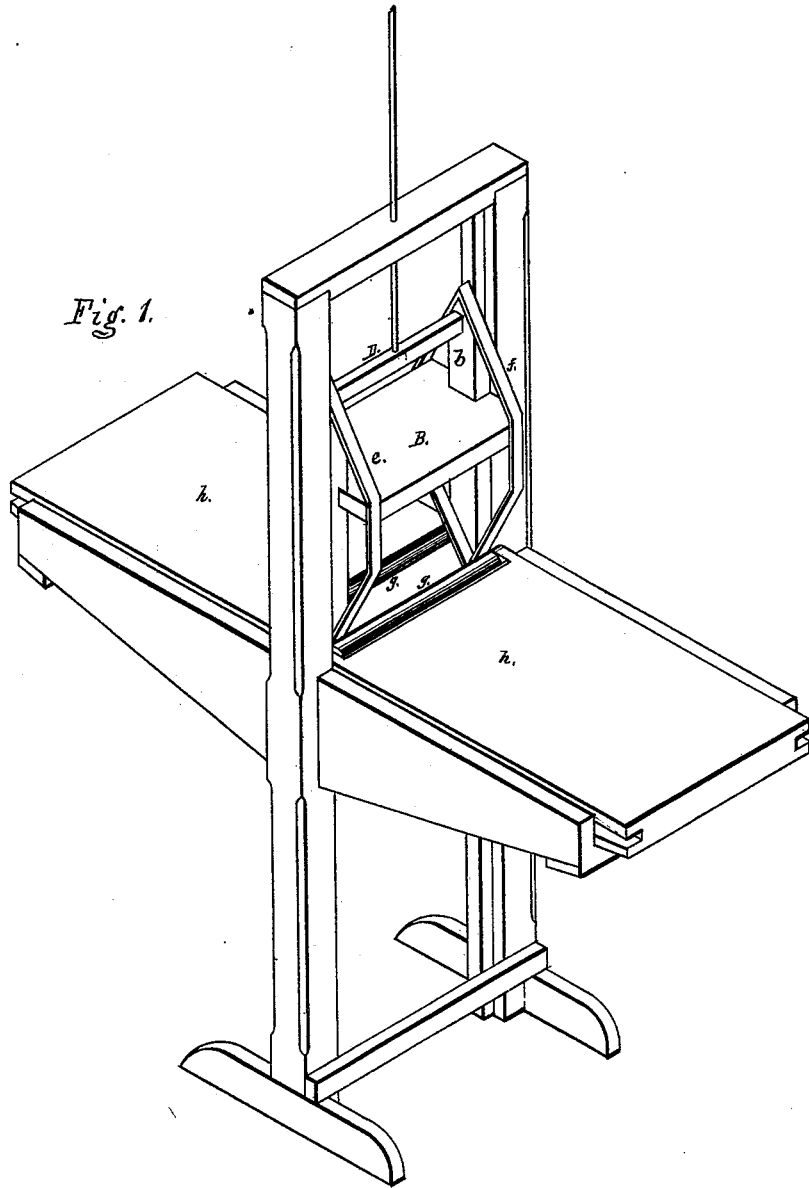


I. H. PHILIPS.
Hatchways.

No. 206,608.

Patented July 30, 1878.



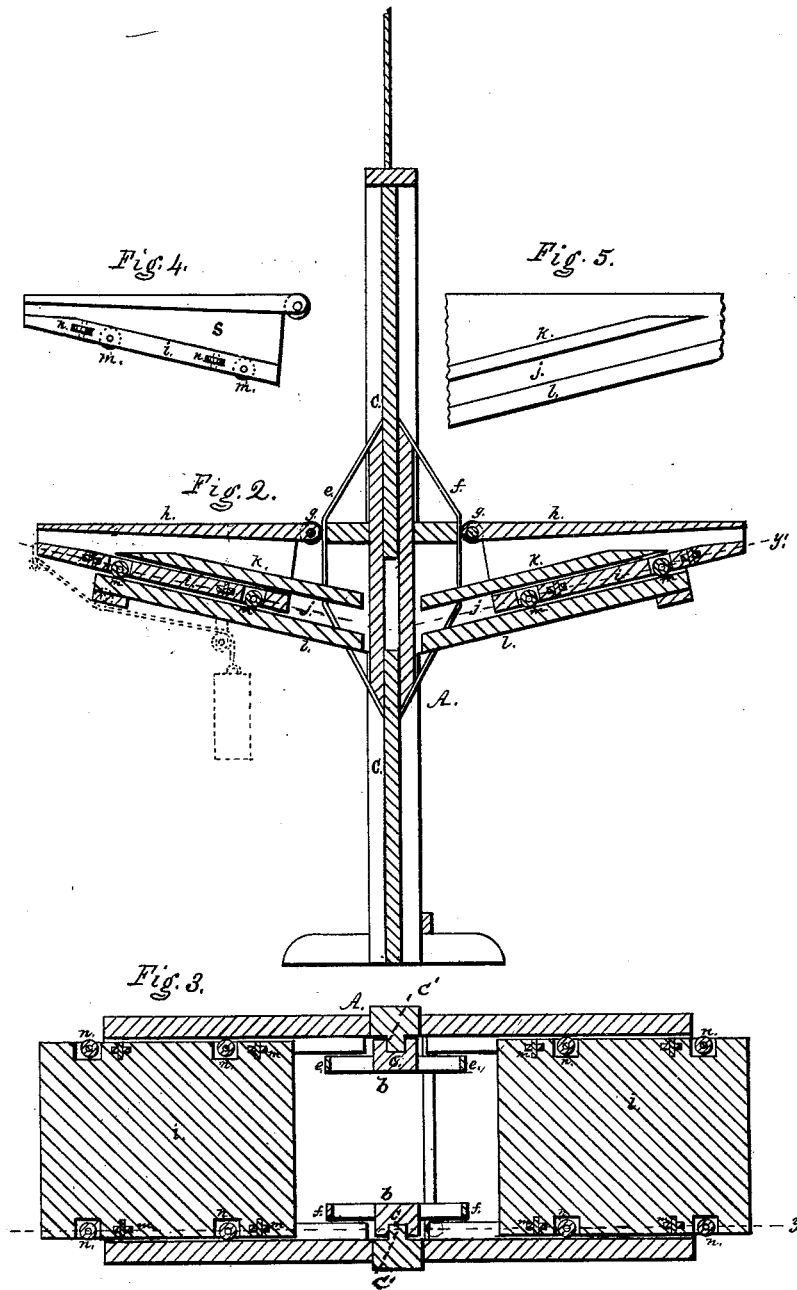
Witnesses
A. C. Johnston
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Inventor
Isaac H. Phillips
By Johnston & Down,
his attorneys.

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UNITED STATES PATENT OFFICE.

ISAAC H. PHILIPS, OF PITTSBURG, PENNSYLVANIA.

IMPROVEMENT IN HATCHWAYS.

Specification forming part of Letters Patent No. **206,608**, dated July 30, 1878; application filed January 14, 1878.

To all whom it may concern:

Be it known that I, ISAAC H. PHILIPS, of Pittsburg, in the county of Allegheny, State of Pennsylvania, have invented a new and useful Improvement in Elevators; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention relates to elevators in which the hatchway-doors are opened by the platform or cage as it passes between them, and afterward closed by their own weight.

My improvement consists in constructing the hatchway-doors so that when closed they shall be on the same plane with the floor of the building, substantially as hereinafter more fully set forth and claimed.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

In the accompanying drawings, which form part of my specification, Figure 1 is a perspective view of the elevator, hatchway, and framework. Fig. 2 is a vertical section at line *y* of Fig. 3. Fig. 3 is a transverse section at line *y'* of Fig. 2. Fig. 4 is a side view of the hatchway-doors. Fig. 5 is a side view of the inclined way for the hatchway-doors.

A A represent vertical timbers, with tongues *c' c'*; and B, the cage or platform, with grooves *c c* in its end pieces *b b*, the said tongues and grooves constituting guides for the cage.

The frame-work of the cage essentially consists of the end pieces, *b*, upper cross-bar, D, and inclined braces *e f*. These braces are arranged so as to form wedge-shaped projections, so that when the cage is raised or lowered the inclined surfaces of said projections will strike against rollers *g g* upon the hatchway-doors, and thereby open the same in order to admit of the passage of the cage through the hatchway. These doors are arranged to slide along inclined ways, and are provided with rollers *m*, whereby their ready movement is facilitated.

In order to bring the upper surface of these

doors on the same plane with the floor, after the cage has passed through the hatchway, I construct the same with an upper horizontal surface, *h*, and a lower inclined surface, *i*, the board or boards of which the same are composed projecting somewhat over the sides *s*, so that the projecting portions of the under side will be adapted to slide in the inclined ways *j*, while the upper sides of the doors will be rendered of sufficient size to admit of the hatchway being closed when the doors are in a closed position. Strips or bars *k l* may be secured in any convenient way below the floor in order to form the ways.

As clearly illustrated in Fig. 4, it will be seen that the doors resemble wedges, and from the arrangement of these with the upper side in a horizontal plane, it will be readily understood that after the cage has forced the same apart and has passed through the hatchway, the doors will descend and the inclined ways come together with their upper sides in the same plane as the floor.

The rollers *g g*, it may be observed, facilitate the passage of the cage between the doors, and, by coming in contact with the lower inclines of the cage after the same is partly through the hatchway, prevent concussion and jarring of the doors. The doors are closed by their own weight, although weights, as shown in dotted lines, Fig. 2, may be employed, if desired.

What I claim as my invention is—

In an elevator in which the hatchway-doors are opened by the cage as it passes between them and closed by gravity, the doors constructed with upper horizontal sides *h* and lower inclined sides *i*, the same being provided with suitable anti-friction rollers, and arranged to travel along inclined ways, so that when closed their upper surfaces shall be in the same plane with floor of the building, substantially as shown and described.

ISAAC H. PHILIPS.

Witnesses:

A. J. DAVIS,

A. C. JOHNSTON.