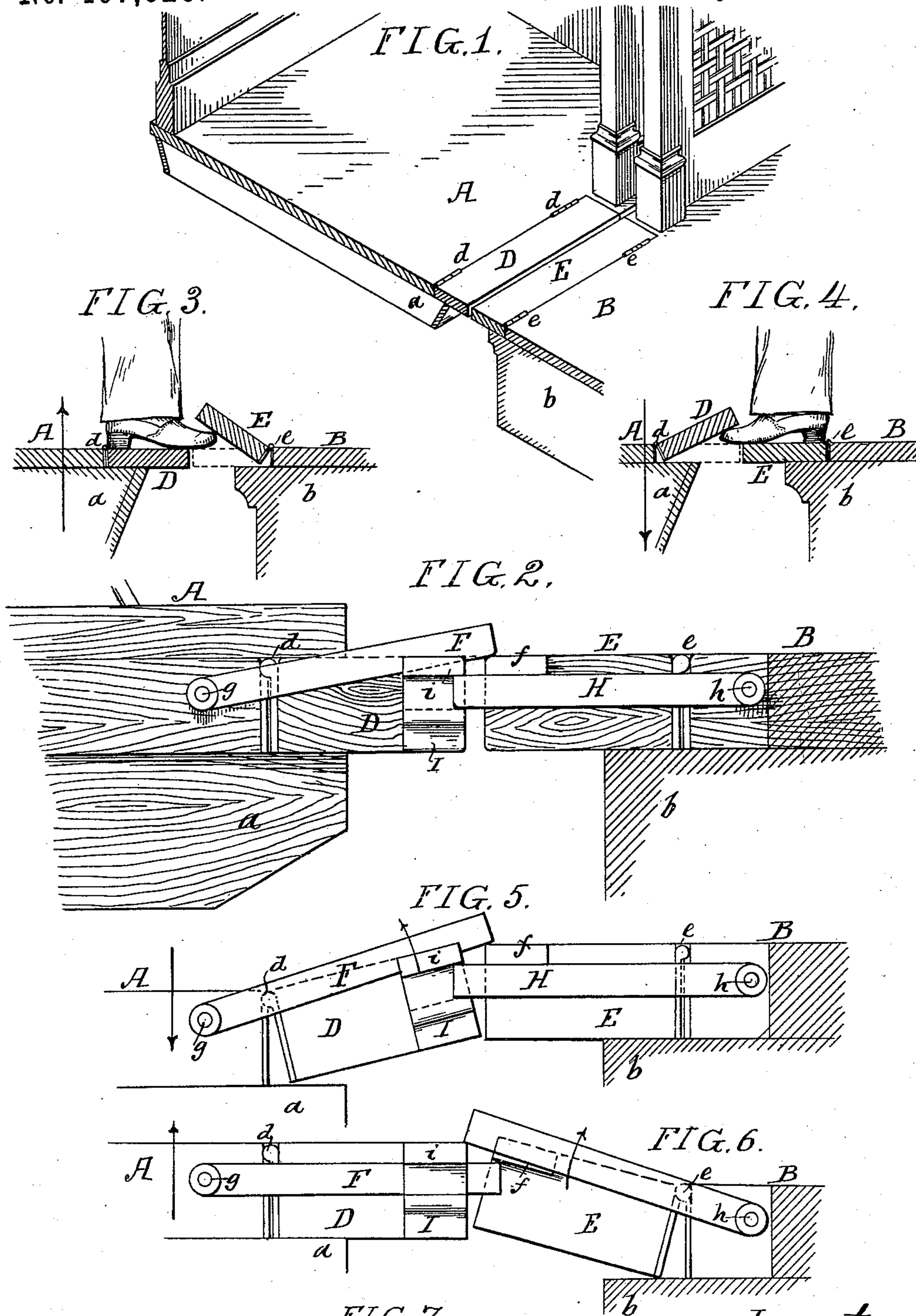


(No Model.)

R. J. WALKER.
ELEVATOR.

No. 407,626.

Patented July 23, 1889.



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UNITED STATES PATENT OFFICE.

ROBERT J. WALKER, OF PHILADELPHIA, PENNSYLVANIA.

ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 407,626, dated July 23, 1889.

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To all whom it may concern:

Be it known that I, ROBERT J. WALKER, a citizen of the United States, and a resident of Philadelphia, Pennsylvania, have invented certain Improvements in Elevators, of which the following is a specification.

The object of my invention is to prevent accidental injury to persons on or near elevators or elevator-shafts; and a further object is to so construct the device that it can be used as a skid or bridge-piece in the event of the elevator being slightly above or below the level of the floor.

In the accompanying drawings, Figure 1 is a sectional perspective view of a portion of a passenger-elevator, showing my improvements. Fig. 2 is an end view of a freight-elevator with my improvements. Figs. 3 and 4 are diagrams illustrating one of the features of my invention. Figs. 5 and 6 are diagrams illustrating other features of my invention; and Fig. 7 is a detached perspective view of a portion of the automatic lifting mechanism.

In the usual construction of elevators the edge of the elevator-platform and the sides of the openings in the different floors of the building come very close together, and in fact form a continuous floor when the elevator is level with one or other of the floors of the building.

Accidents frequently occur, especially in factories where freight-elevators are used, to people standing at the elevator-shaft with one foot extending slightly over the edge of the floor, the elevator in its descent completely cutting off or crushing the projecting portion of the foot. The same accident may happen to a person on the elevator standing with one foot projecting over the edge of the elevator-platform, the foot being crushed by contact with the under side of the floor on the ascent of the elevator. Planks or other objects are also sometimes carelessly left too near the elevator-shaft, and on the ascent or descent of the elevator cause damage to the same. I overcome these objections in the following manner:

Referring to the drawings, I will first describe my invention in connection with a passenger-elevator.

A is the floor of the elevator; B, one of the

floors of the building; *a*, the supporting-beams for the floor of the elevator, and *b* are the joists of the building.

The floor of the elevator-car is cut away to a depth depending on circumstances, and in this space is placed a pivoted section D, pivoted at *d* to the floor of the elevator. This section extends over and is supported on the under side of the floor-supporting beams *a*. The floor of the building is also cut away, as shown, leaving a space of about eight inches between the floor of the elevator and that of the building. A section E is placed in the space and pivoted at *e* to the floor-section of the building, so that one of the pivoted sections is secured to the floor of the elevator, while the other section is pivoted to the floor of the building. The section E is duplicated on the different floors of the building. The sections E are also supported on the under side by brackets or other suitable supports, which do not, however, extend to the joint between the two pivoted portions. By making these sections pivoted a very close joint can be made between the floor of the elevator and the floor of the building.

It will be seen on reference to the diagrams, Figs. 3 and 4, that by my invention the accidents above described are entirely avoided. For instance, a person on the elevator happens to have a portion of his foot extending beyond the outer edge of the elevator-floor. On the ascent of the elevator the projecting portion of the foot will come in contact with the under surface of the pivoted section E of the floor of the building, which, being of light weight, will be lifted by the foot, as shown in Fig. 3, and will fall back as soon as the elevator is raised sufficiently far above the floor, the person being at liberty to withdraw his foot at any time without injury. Fig. 4 shows where a person waiting on a certain floor of the building for the elevator to descend has unconsciously projected a portion of his foot over the elevator-well. As the elevator descends, the pivoted portion D of the elevator-floor would strike the upper portion of his foot and be raised by the foot without injuring the same. This simple arrangement can be applied to either passenger or freight elevators; but when used in connec-

tion with freight-elevators I also attach mechanism for automatically raising these pivoted sections, so that in case the elevator stops slightly above or slightly below the floor one
 5 or other of the pivoted sections forms a bridge-piece over which a truck or other articles can be passed from the elevator to the floor, or from the floor to the elevator, as the case may be, the pivoted section D acting as the bridge-
 10 piece when the elevator is below the floor and the pivoted section E acting as the bridge-piece when the elevator is above the floor. I construct this mechanism in the following manner, reference being had to Figs. 2, 5, 6,
 15 and 7. I will first describe the devices for lifting the pivoted section E of the floor of the building.

On each end of the pivoted section is a lug *f*, secured to the section in any suitable manner, the manner of securing depending upon
 20 the size of the elevator and the weight of goods likely to be carried thereby.

On the elevator-car are two levers *F F*, pivoted at *g* to the elevator floor or frame, as the
 25 case may be, these levers extending beyond the edge of the pivoted section D, so as to engage with lugs *f f* on the section E. It will be seen, on referring to Fig. 6, that when the elevator is raised and is stopped slightly
 30 above the level of the floor the levers *F F* strike the lugs *f* and raise the outer end of the pivoted section E to the level of the elevator-floor, thus allowing a truck to be rolled onto or from the elevator without jar. When
 35 the elevator-car continues its ascent, the lug *f* on the pivoted section E draws away from the end of the lever *F* and falls to its normal position. When the elevator-car is descending, the levers merely strike the upper
 40 portions of the lugs and fall back to their normal position in precisely the same manner.

Levers *H H*, pivoted at *h* to any portion of the floor of the building adjacent to the elevator-shaft, as shown in Fig. 2, extend out
 45 beyond the edge of the floor of the elevator, and on the pivoted section D of the elevator-car are lugs *i*, (in the present instance on a bracket *I*,) of the peculiar form shown in Fig. 7. On the descent of the elevator these lugs
 50 come in contact with the ends of the levers *H*, and the section D being pivoted its outer end will occupy a position level with the floor of the building until it passes the end of the lever *H*. If the elevator be stopped slightly
 55 below the level of the floor, therefore, the pivoted section D acts as a bridge-piece, over which a truck can be passed from the elevator to the floor, or vice versa.

I have made the bracket *I* in the peculiar
 60 form shown, so that the lug can pass the le-

ver *F*, and the bracket also acts as a bearing for the outer end of the lever.

It will be evident that other forms of automatic devices for accomplishing the same purpose may be used without departing from my
 65 invention; and it will be understood, also, that only one of the pivoted sections may be used. For instance, the elevator-platform section D may be dispensed with and the floor only provided with pivoted sections, or the floor-sections may be dispensed with and the elevator-platform section used; but I prefer in all
 70 cases, where circumstances permit, to use both pivoted sections.

I claim as my invention—

1. The combination of the elevator floor or platform, the building-floor, a section pivoted to the elevator-floor and a section pivoted to the building-floor, said pivoted sections filling the space between the floor of the elevator
 80 and the floor of the building, and acting substantially in the manner and for the purpose described.

2. The combination of an elevator, the pivoted floor-sections thereon, and pivoted levers
 85 projecting into the elevator-well at the different floors of the building and adapted to come in contact with the pivoted floor-section of the elevator on the descent of the elevator, so that the said pivoted section will act as a
 90 bridge-piece for the removal of freight from or onto the elevator, substantially as described.

3. The combination, in an elevator, of the floors of the building and pivoted floor-sections thereon, with levers on the elevator
 95 which come in contact with and raise said pivoted floor-sections on the ascent of the elevator, so as to form bridge-pieces over which trucks can be moved, substantially as described.

4. The combination of the elevator with the floors of a building, a pivoted floor-section on said elevator and a pivoted floor-section on the different floors of the building, with lugs
 105 on the floor-sections of the building and levers on the elevator acting on said lugs, and with lugs on the floor-section of the elevator and levers at or near the different floors of the building which project into the elevator-
 110 well and come in contact with the lugs on the pivoted elevator-section, substantially as and for the purpose described.

In testimony whereof I have signed my name to this specification in the presence of two
 115 subscribing witnesses.

ROBERT J. WALKER.

Witnesses:

H. F. REARDON,
 R. S. GLASS.