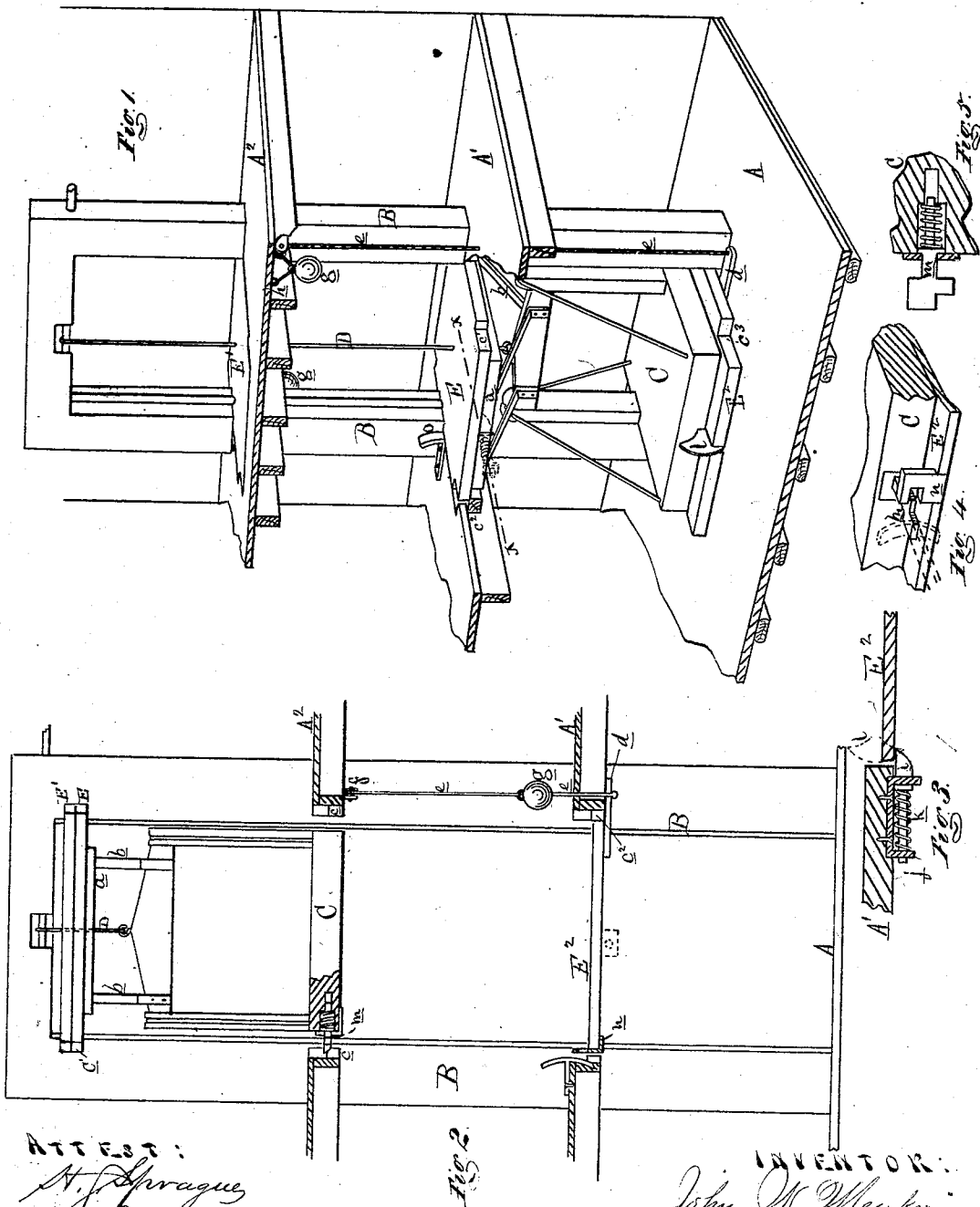


J. W. MEAKER.
Self-Closing Hatchways.

No. 151,708.

Patented June 9, 1874.



ATTEST:

N. J. Sprague
G. F. Ebert

Fig. 2

INVENTOR:

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UNITED STATES PATENT OFFICE.

JOHN W. MEAKER, OF DETROIT, MICHIGAN:

IMPROVEMENT IN SELF-CLOSING HATCHWAYS.

Specification forming part of Letters Patent No. **151,708**, dated June 9, 1874; application filed July 15, 1873.

To all whom it may concern:

Be it known that I, JOHN W. MEAKER, of Detroit, in the county of Wayne and State of Michigan, have invented an Improvement in Devices for Closing Elevator-Hatchways, of which the following is a specification:

As is well known, hoistways or elevators have heretofore been provided with lift-covers for the hatchways in the floors, so arranged as to be carried up by the car or platform as it ascends, and deposited or left in the opening for which it is designed in its descent; but as the openings are left unguarded when the lifts or covers are carried up, the object of my invention is to provide in addition to these lift-covers another series of closers, constructed and arranged, with certain mechanism, under the car or platform, so that they may follow it in its ascent and close the openings as it passes, and also so that they may be carried down by its descent, as hereinafter explained.

Figure 1 is a sectional perspective view of a three-story building having its elevator-hatchways fitted with my improved self-closing hatches, the elevator-platform resting on the lower floor. Fig. 2 is a sectional elevation, showing the platform at the upper hatchway and the lower ones closed. Fig. 3 is a cross-section at $x x$ in Fig. 1. Fig. 4 is an enlarged perspective view of a portion of the left side of the platform, showing a modification of the device used for carrying up a cover on the lower side of the platform and leaving it at a hatch above the lower floor. Fig. 5 is a detail plan of the same, showing a portion of the platform in horizontal section.

In the drawing, $A A^1 A^2$ represent, respectively, the first, second, and third floors of a building having hatchways cut in the latter two, in which are erected the elevator guide-posts $B B$, between which the platform is raised and lowered by means of the hoist-rope D , in any convenient manner. E^2 is a cover fitted loosely into the hatchway, and is placed under the platform. It is notched, as at c^3 , in each corner to pass the corner-blocks c^2 of the middle hatchway. One way of operating it is by cords and weights, which we will now describe: From each side projects a bar, d , to which is secured a cord, e , led through a hole in the second floor over a pulley, f , pendent from the

third floor, thence through the eye of a counter-weight, g , and made fast to an eye, h , pendent from the third floor. As the platform rises the counter-weights fall and draw up the cover E^2 until the bars d strike the under side of the second floor, which arrests the cover, and thus closes the hatchway. To prevent the hatch from falling when a person steps on it, or a heavy object is placed thereon, we employ two spring latch-bolts, one at the front and the other at the back end of the hatchway. i , Fig. 3, is a bolt placed in a frame, j , secured to the under side of the second floor, and is shot forward past the combing of the hatchway by a spring, k , spirally coiled about it between a shoulder and the back end of the frame. l is a cam projecting from the front and back edges of the platform, which push back the latch-bolts as the platform passes up or down. As it passes up the bolts recede, and shoot forward again as soon as the cover passes up, and thus form a support for it. When the platform approaches the hatchway in going down, the cams projecting from it push back the bolts, when, in the continued descent of the platform, the cover is carried down with it. To avoid the use of the cords and weights, where they would prove objectionable, we employ the devices shown in Figs. 2, 4, and 5, consisting of an angular T-headed spring-bolt, m , mortised in each side of the platform. At each side of the cover E^2 is a notched plate, n , standing vertically, (the cover is wider than the platform,) which notch receives the side of the bolt-head, and thus locks the cover to the platform. In the sides of the second-floor hatchway are two stationary cams, o , which, as the platform passes up, push back the bolts m and release the cover E^2 , which is then supported by the spring-bolts $i i$ until the platform passes down again.

There are many ways in which the lifts or covers on the upper side of the car or platform may be and have been applied and operated. In all cases they may be carried up or lifted by the platform as it ascends. In its descent they may be suspended in the openings, or supported therein by projecting rims or blocks, as shown, a being a frame supported by brackets b springing from the top of the platform-cage. On this frame rests a hatch or

loose cover, E, and upon this lies a similar one, E¹, each having a hole, through which the hoist-rope passes to the girt. Each corner of the hatch E may have a notch, e', cut in it, and in each corner of the upper hatchway there may be a rectangular supporting-block, c, Fig. 2, spiked in it, but not large enough to arrest the platform in its descent. Each corner of the hatchway in the second floor may have a block, e², which is larger than the notch, which thus arrests and supports the hatch after the platform has passed down, and thus closes the hatchway of the second floor. The hatch E¹ is arrested by the blocks c at the corners of the upper hatchway, which it closes whenever the platform passes down. When it passes up it takes these loose hatch-covers on its frame, the platform itself closing the upper hatchway.

I do not, however, claim any of these differ-

ent ways of constructing and arranging the lift-covers; but

What I do claim is—

1. The combination of the moving platform C, with one or more counterweighted closers, E², suspended beneath it, together with the spring-bolts i, cams l, and one or more loose lift-covers E E¹ arranged above it, as specified, for the purpose of keeping the hatchways closed, as set forth.

2. One or more hatch-closers, E², suspended beneath the platform, and counterweighted, as described, in combination with the spring-bolts i and cams l for supporting and detaching the same, as and for the purpose set forth.

JOHN W. MEAKER.

Witnesses:

H. F. EBERTS,
H. S. SPRAGUE.