

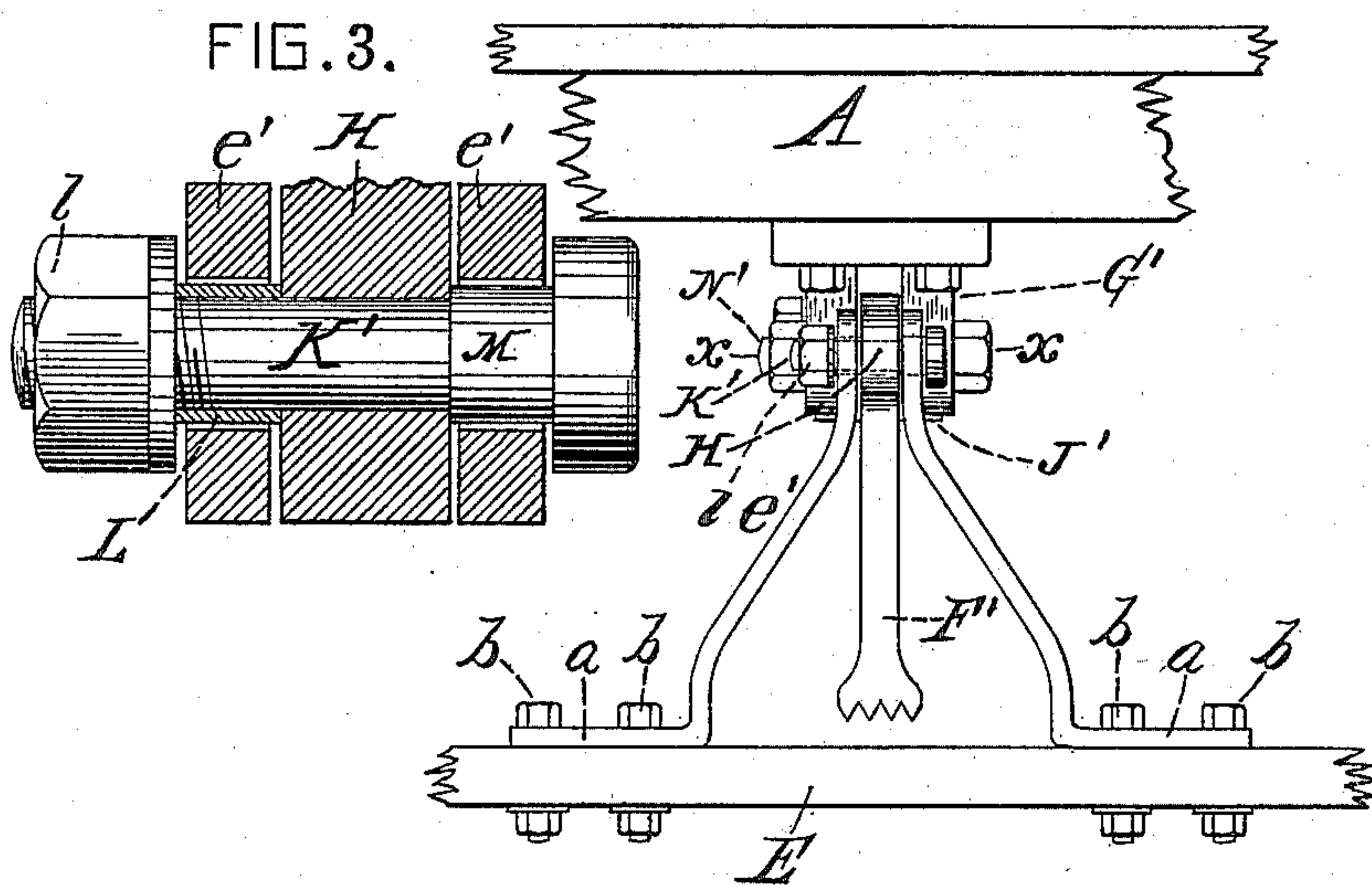
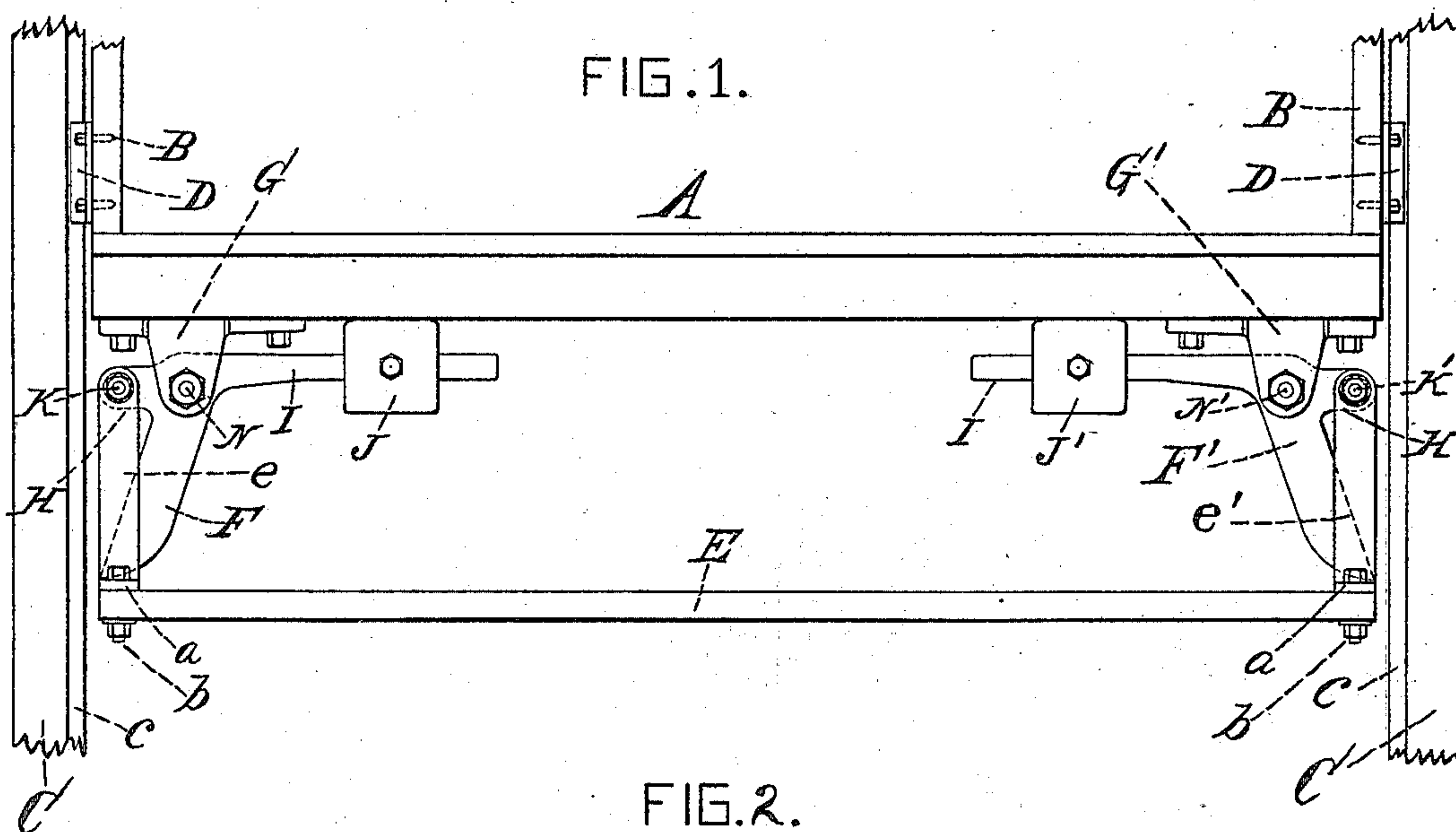
(No Model.)

E. J. SHAW.

AUTOMATIC SAFETY APPLIANCE FOR ELEVATORS.

No. 363,302.

Patented May 17, 1887.



ATTEST

Frank Willard

John Adams

INVENTOR

Elias J. Shaw,
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UNITED STATES PATENT OFFICE.

ELIAS J. SHAW, OF CINCINNATI, OHIO, ASSIGNOR TO HENRY J. REEDY, OF
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AUTOMATIC SAFETY APPLIANCE FOR ELEVATORS.

SPECIFICATION forming part of Letters Patent No. 363,302, dated May 17, 1887.

Application filed March 11, 1887. Serial No. 230,478. (No model.)

To all whom it may concern:

Be it known that I, ELIAS J. SHAW, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Automatic Safety Appliances for Elevators, of which the following is a specification.

My invention relates to improvements in that class of elevator safety appliances in which is used a supplemental bottom or float suspended from beneath the platform of the car, and provided with detent-pawls and weighted controlling devices, which operate to catch and hold the car by the resistance of the air against said supplemental bottom in the event of a sudden fall of said car occasioned by the breaking of the hoisting-cable or other cause—such, for instance, as a human being or obstruction of any kind beneath said supplemental bottom.

My invention consists in providing, in combination with the platform of an elevator-car, a supplemental bottom or float, a pair of standards or hanging legs mounted upon said float at either end thereof, and a pair of detent-pawls, the latter having weighted levers or arms constructed integral therewith and pivotally connected by bolts to the platform and float, respectively, whereby the said supplemental bottom is normally held suspended and said pawls out of engagement with the upright guides in the elevator-well until meeting an obstruction or the accidental breaking of the hoisting-cable, at which instant said float rises by its sudden contact with the object or air, whose resistance causes the pawls to turn outward and engage said guides to prevent a farther descent of the car.

Other features of my invention will be fully set forth in the following description of the accompanying drawings, in which—

Figure 1 is a front elevation of an elevator-platform, showing my improved automatic safety appliance suspended therefrom in its normal position, at rest, the stiles of the car and the upright guides being shown broken off; Fig. 2, an end view of the same, but omitting the upright guides and stiles of the car; and Fig. 3, a full-size elevation of one of the pivotal bolts used for connecting the suspension-stand-

ards of the supplemental bottom with the detent-pawl, showing the connecting-arm on the pawls, and the upper ends of the standard broken off and in horizontal section on line *x x*, Fig. 2.

A represents the platform or floor of the car; B B, the vertical side bars or stiles thereof, and C C the wooden guide-bars, standing in their usual position in the well or shaft.

c c are fins or tongues on the faces of guide-bars C C, respectively, and D D are guide-plates attached upon said stiles B B and engaging the tongues *c c*, as customary.

E represents a horizontal supplemental bottom or float suspended a suitable distance below the platform A by means of rigid standards *e e'*, weighted detent-pawls F F', and hangers G G', attached upon the opposite ends of the bottom of said platform.

Standards *e e'* are each composed of two upright bars provided with spreading feet *a a*, through which pass bolts *b b*, to secure them firmly in place upon the float E, and at the same time sustain the float perfectly level or horizontal, the better to insure its true designed operation upon the safety-catches, which I will presently describe. The said bars of the standards are bent into such shape that their upper ends approach each other, leaving a wide opening between them at the bottom, in which lie and operate the detent-pawls.

H H represent short arms at the upper ends of the pawls, projecting outwardly therefrom, and I I are long arms or levers, also at the upper ends of said pawls, but projecting inwardly, both sets of arms H and I being preferably formed integral with said pawls.

J J' represent weights, adjustably secured upon arms I I, and adapted to be set thereon in a position to approximately counterbalance the float and the intermediate parts.

K K' represent bolts, pivotally connecting the upper ends of the standards with the short arms H, which lie between said upper ends of the standards, the openings in said ends for receiving the bolts being slightly larger in a horizontal line, as shown in Fig. 3, than the adjacent parts or diameter of the shanks of the bolts, to furnish free and easy working-joints, and thereby permit the float to rise and the

weighted ends of the pawls to descend without binding, as the short arms H of the pawls must necessarily move in the arc of a circle, and would otherwise prevent the operation of the
5 said float and pawls.

L represents a thimble or collar on the shank of both bolts K K', adjacent their nuts l, and M is an enlarged or shouldered portion of said bolts, adjacent the heads thereof, being pro-
10 vided to set said bolts rigidly in place in the arms H, with a space between said arms and the adjacent upper ends of the standards, thereby forming essential parts of said free joints.

N N' represent bolts pivotally connecting
15 the weighted pawls with the hangers G G', and preferably in a similar manner to that described in connection with bolts K K', except as to the enlarged bolt-holes. The inner faces of the fastening-nuts on both sets of bolts just de-
20 scribed are preferably circular, as plainly shown in Fig. 3, to obviate any possible indentation or abrasion of the adjoining faces of the standards to interfere with the proper move-
25 ment of the float in case of accident, which indentations or abrasions might otherwise occur and cause the parts to bind were the edges or corners of the nuts to come in contact therewith.

In the operation of my appliance, upon the breaking of a cable or other cause, whereby
30 the car might fall or descend too rapidly and cause damage, the resistance of the air upon the under face of the supplemental bottom or float or any obstruction beneath would cause it to rise, and at the same moment force the

claws or detent-pawls to move outward and
35 catch into the wooden guide-bars, thereby instantly arresting the downward course of the car. In order to sustain the pawls in proper position for instant use, I arrange the weights
40 J J' on their arms, so that they lie against the bottom of the car, as shown in Fig. 1, thereby preventing the catching ends of said pawls backing too far away from the guide-bars, and also avoiding all unnecessary lost motion.

I claim—

1. In an elevator, an automatic safety ap-
45 pliance composed of a horizontal supplemental bottom or float, E, suspension-standards e e', and weighted detent-pawls F F' J J', one at each end of said float, pivotally connecting said
50 float with hangers on the bottom of the elevator-platform, all combined substantially in the manner and for the purpose specified.

2. In an elevator, the combination, with the platform A, float E, and a pair of suspension-
55 standards, e e', at each end of said float, of the pivotal connecting-bolts K K' and N N', having thimbles L, and shouldered portions M, whereby a free and unencumbered joint is pro-
60 vided, substantially as and for the purpose specified.

In testimony of which invention I have here-
unto set my hand.

ELIAS J. SHAW.

Witnesses:

JOHN E. JONES,
FRANK MILLWARD.