(No Model.)

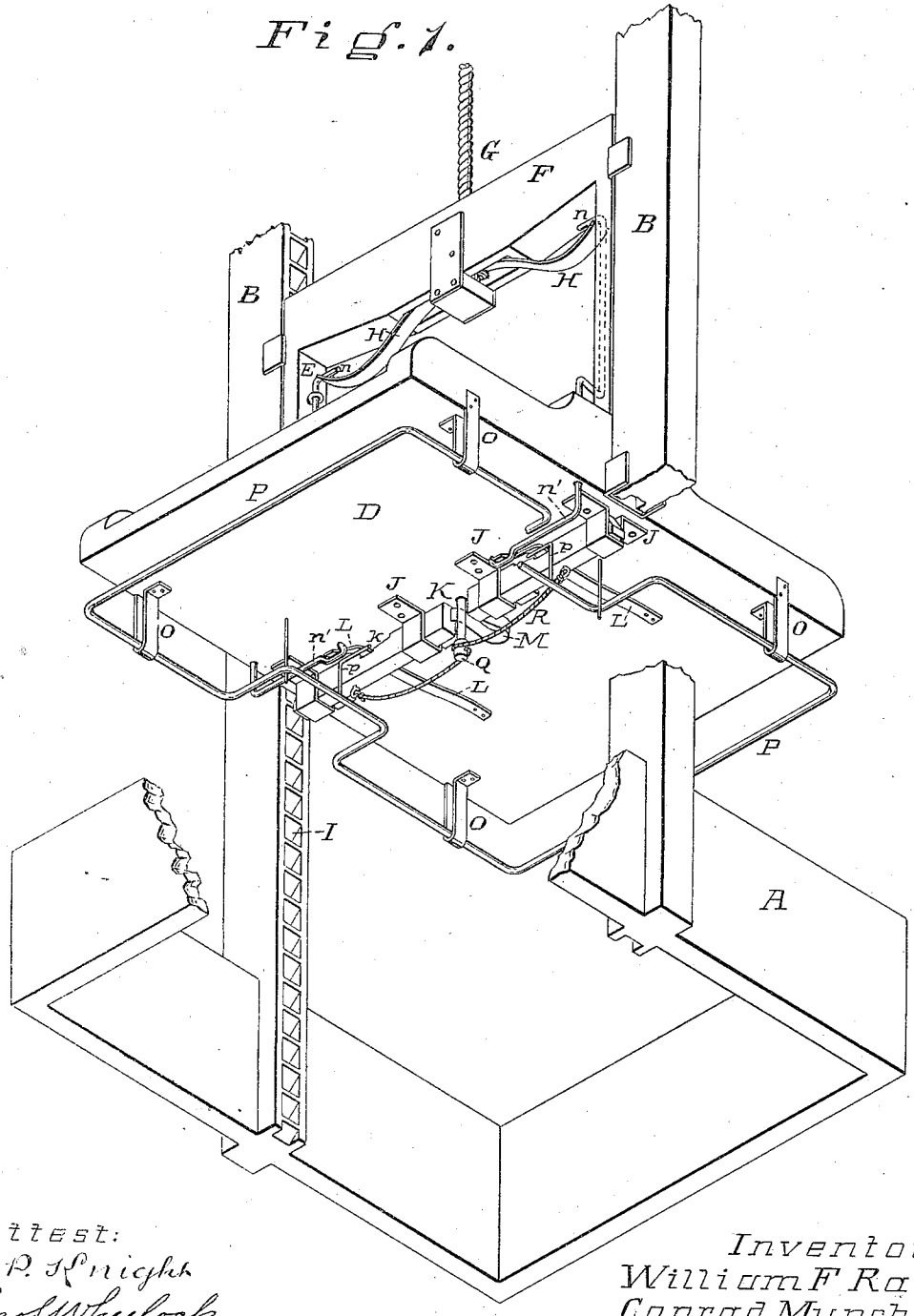
2 Sheets—Sheet 1.

W. F. RAU & C. MÜNCH.

ELEVATOR.

No. 311,783. Patented Feb. 3, 1885.

Fig. 1.



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(No Model.) 2 Sheets—Sheet 2.

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Fig. 2.

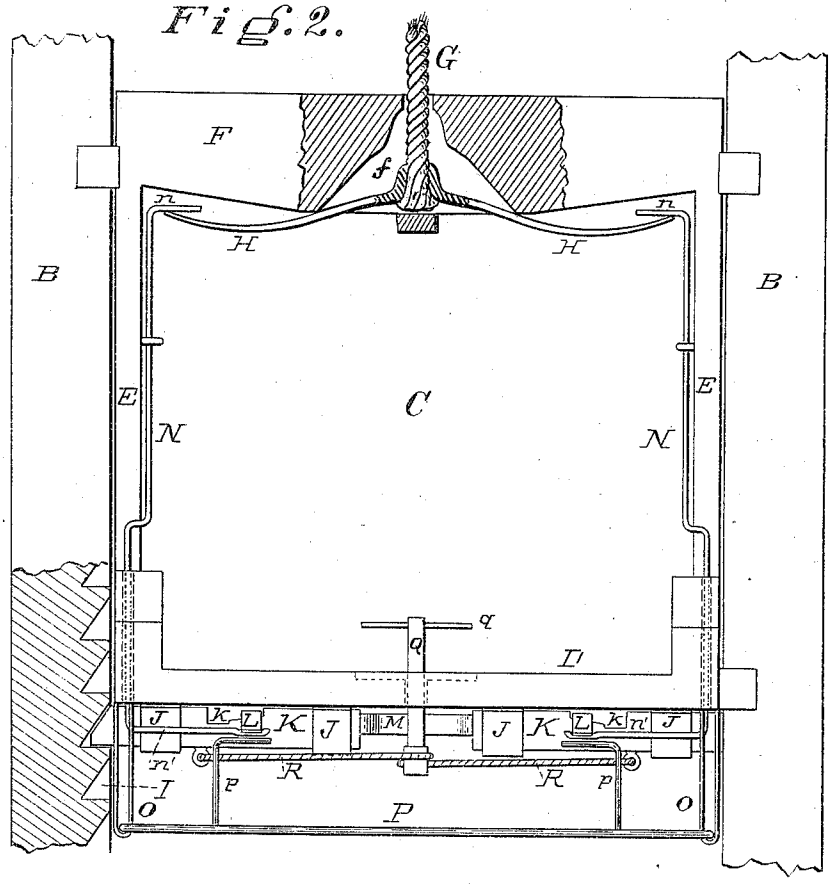
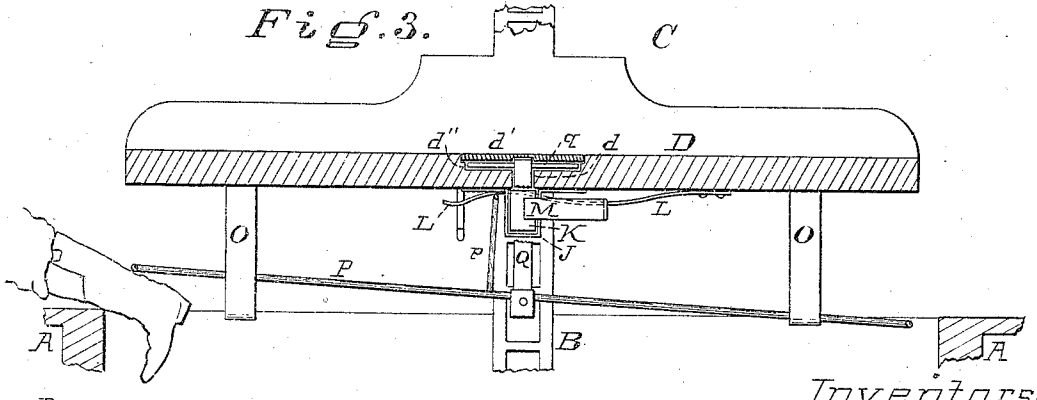


Fig. 3.



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UNITED STATES PATENT OFFICE.

WILLIAM F. RAU AND CONRAD MÜNCH, OF CINCINNATI, OHIO.

ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 311,783, dated February 3, 1885.

Application filed December 4, 1884. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM F. RAU and CONRAD MÜNCH, both of Cincinnati, Hamilton county, Ohio, have jointly invented a new and useful Improvement in Elevators, of which the following is a specification.

Our invention relates to improvements in those platform-elevators which are provided with safety-catches that operate to automatically arrest the descent of the platform on the least suspension or disturbance of its normal operations—such, for example, as the parting or giving way of the hoisting-cable. With this object in view we provide a pair of spring latch or catch bolts which, so long as the apparatus is operating normally, are non-effective, but which become effective either from the giving way of the hoisting-cable or by the interposition of an obstruction beneath the platform.

In the accompanying drawings, Figure 1 is a perspective view, looking upward, of a platform hoist or elevator with our safety attachments in their normal condition. Fig. 2 is a partly sectional front view showing the safety-catch brought into operation by the giving way of the hoisting-cable. Fig. 3 is a vertical section in a plane at right angles to Fig. 2, showing the said catch brought into operation by the interposition of an obstruction between a gangway-sill and the descending platform.

A may represent portions of the gangway-sills, and B the guiding-stanchions of a hoisting-platform, C, consisting of customary floor, D, posts E, and beam F. G represents the hoisting-cable. This cable is not attached direct to the beam F, but to a pair of springs, H, which themselves bear against the beam when the cable is drawn taut, said beam having a concave recess, *f*, for that purpose. In the normal condition of the apparatus, the head or protuberance *g* on the end of the hoisting-cable pressing the said springs H firmly into the recess *f* on the under side of the beam F, said springs are entirely relieved from the weight of the platform. Each stanchion has on the side nearest to the gangway a rack, I, such as commonly employed in connection with elevator safety-catches. Staples or keepers J beneath the platform serve to hold and guide latch-bolts K, which are normally held out of contact with said racks by means of spring-detents L, that engage notches *k* of said bolts. The said bolts (when liberated from these detents) are shot outward (so as to engage in the racks I) by pressure against them of springs M; hence whatever will operate to release the detents L will act to liberate the bolts K for engagement in the racks I.

In our improvement there are, as already stated, two classes of accidents, either of which is effective for that purpose. For release by the parting, rupture, or giving way from any cause of the hoisting-cable, we provide trigger-rods N, which terminate above in arms *n*, that rest upon the springs H, and which terminate below in arms *n'*, that extend underneath the detents L without (except in the act of discharge, as hereinafter explained) touching said detents. When the giving way of the hoisting-cable permits the extremities of the springs H to rise, that action of said springs operates to lift the rods N, and through them to lift also the detents L, and to set the bolts K at liberty to spring out and engage in the racks I. This action is seen in Fig. 2. For similar release of said safety-bolts by interposition of any obstacle between the gangway-sill and the descending platform, we attach to the platform's under side a number of bridles, O, within which rests a trigger-rail, P, having fingers *p*, that project underneath the detents L. Elevation of any part of the trigger-rail P by an obstruction placed beneath it operates to lift the fingers *p*, and through them the detents L, so as to "shoot" the safety-bolts K. This action is seen in Fig. 3.

To enable ready resetting or recocking of the safety mechanism, the platform-floor has at its center an orifice, *d*, which (after removal of a cap, *d'*) affords access to a small windlass, Q, to which is attached a cord, R, whose two ends are fastened to the said safety-bolts K. Rotation of said windlass winds up the cord R and retracts the bolts, so as to enable re-engagement of the detents L in the notches *k* of the safety-bolts. An oblong recess, *d''*, at the top of the orifice *d*, enables temporary suspension of activity of the safety-catch by simply engaging the windlass-handle *q* in said recess in the wound condition of the windlass; but

generally, after resetting of the safety mechanism, the said windlass is suffered to unwind, so as not to interfere with the safety action.

The construction of our device is such as to insure so quick and direct an action of the safety-bolts as to preclude the genesis of a destructive momentum in the platform.

We claim as new and of our joint invention—

1. The combination, with springs H and M, the recessed beam F *f*, the hoisting-cable G *g*, and with racks I of an elevator-platform, of the horizontally-sliding safety-bolts K, having notches *k*, for engagement of spring-detents L, combined, in the manner explained, with trigger-rods N, as and for the purpose set forth.

2. The combination, with the safety-bolts K and the spring-detents L, of the trigger-rail P, constructed and operated in the manner explained.

3. The combination, with the safety-bolts K, of the resetting-windlass Q R, substantially as set forth.

In testimony of which invention we hereunto set our hands.

WILLIAM F. RAU.
CONRAD MÜNCH.

Attest:
GEO. H. KNIGHT,
CHAS. E. PRIOR.