C. W. COLLYER.

Elevators.

No. 140,473. Patented July 1, 1873.

Fig. 2.

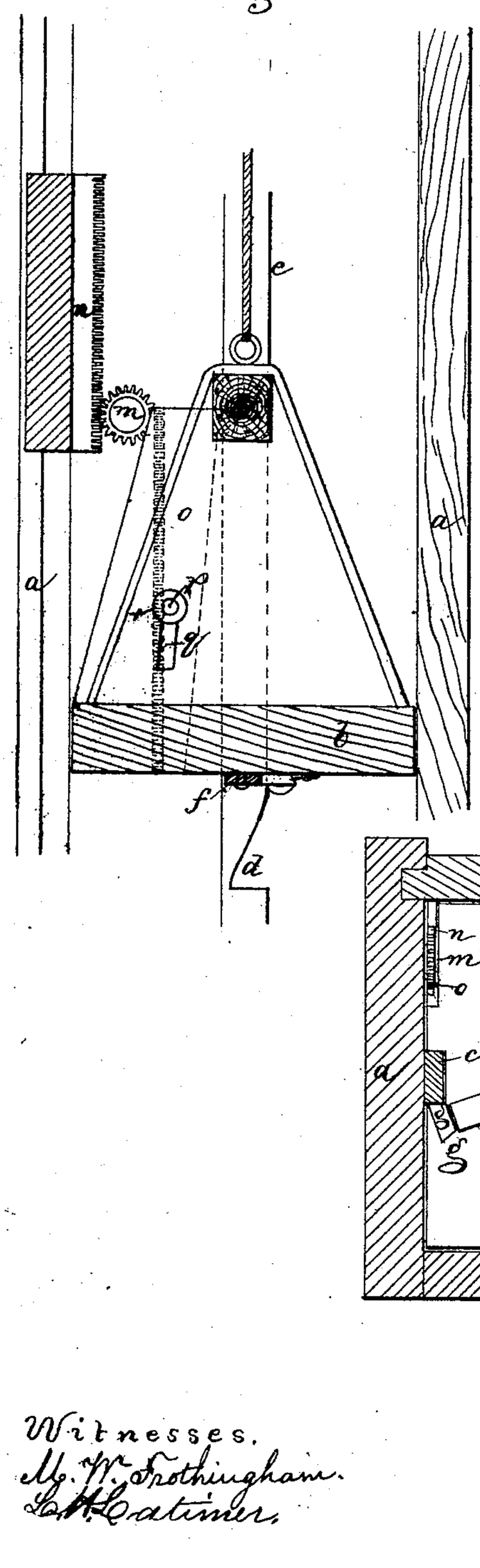


Fig. 3.

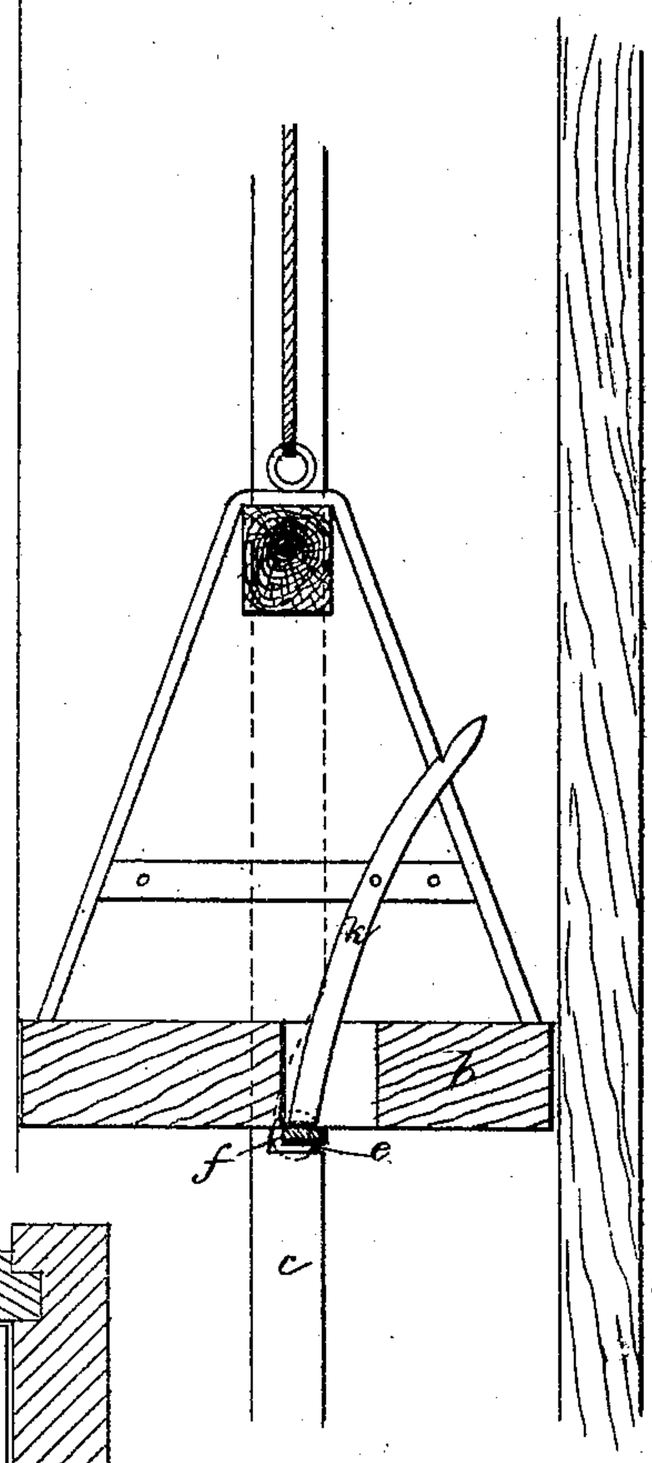
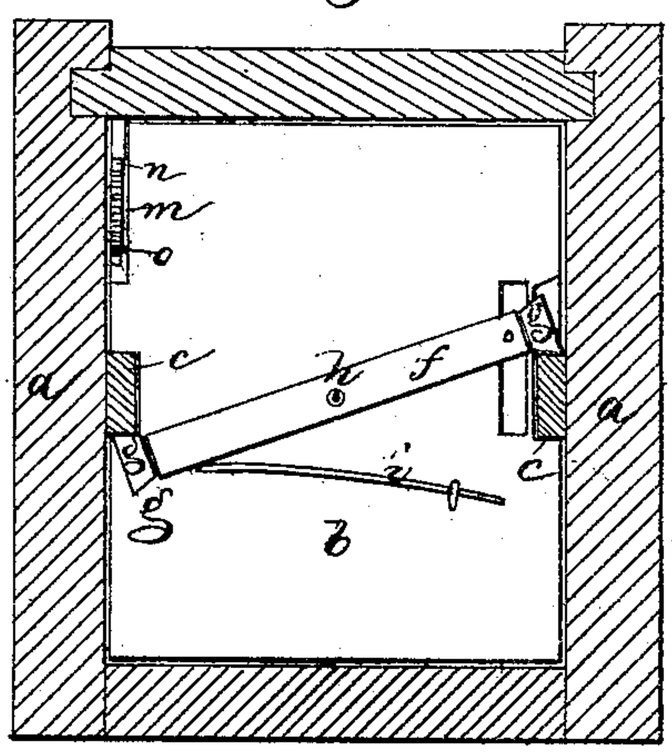


Fig. 1.



Witnesses.
M. W. Frothingham.
L. H. Latimer.

Inventor.
Charles W. Collyer.
By his Attys.
Crosby & Gould

UNITED STATES PATENT OFFICE.

CHARLES W. COLLYER, OF MARBLEHEAD, MASSACHUSETTS, ASSIGNOR TO HIMSELF AND CHADWELL TUCKER, OF SAME PLACE.

IMPROVEMENT IN ELEVATORS.

Specification forming part of Letters Patent No. **140,473**, dated July 1, 1873; application filed May 23, 1873.

To all whom it may concern:

Be it known that I, CHARLES W. COLLYER, of Marblehead, in the county of Essex and State of Massachusetts, have invented an Improvement in Elevators; and I do hereby declare that the following, taken in connection with the drawings which accompany and form part of this specification, is a description of my invention sufficient to enable those skilled in the art to practice it.

The invention relates to improvements in details of mechanism relating to elevators, and particularly to an arrangement of mechanism for insuring the arrest of a falling car, and an arrangement of mechanism for enabling the rising car to effect the closing of a landing-door as it passes it.

The drawing represents the mechanism embodying my invention.

Figure 1 shows a bottom view of the car and a section of the hoist-way. Fig. 2 shows a vertical section of the car, looking toward one side of the hoist-way; Fig. 3, a similar section looking in the opposite direction.

a a denote the side walls of the hoist-way; *b*, the car, which may be suspended and raised and lowered in any suitable manner. Against each of the opposite sides of the hoist-way is a bar or vertical rail, *c*, and on one edge of one of these rails are notches *d*, and on the opposite edge of the other rail are similar notches *e*. To the bottom of the car is pivoted a lever or bar, *f*, the opposite ends of which extend by the respective notched edges of the rails *c*. and carry friction-rolls *g*. The lever is pivoted at its center, as seen at *h*, and is actuated by a spring, *i*, to hold the two rolls up against the notched edges of the rails, the stress of the spring holding the rolls normally up to said edges, and the rolls entering the notches as they reach them, they and the lever locking and maintaining the car in stationary position, or arresting it whenever accidentally or otherwise it reaches a position to enable the rolls to enter the notches. The notches are, preferably, placed so as to stop the car at each landing. By means of a lever, *k*, the lever *f* may be turned on its pivot to permit the car to pass down by the landing or the notches, but, by leaving the bar *f* free to be operated by the spring, the car will always be arrested if the rope by which it is suspended breaks.

To close the door at any landing, as the car in rising passes said landing, I place pinions *m* or pins extending from one of the walls of the hoist-way, and fix to the inner side of the landing-door a gear-rack, *n*. As the door passes by the pinion it meshes with the pinion. Between the car and the hoist-way wall is a sliding gear-rack, *o*, moving against a suitable guide, and having a pin, *p*, extending from it through a slot, *q*, in the side wall of the car, the pin having upon its inner end a suitable knob, *r*. The slot *q* is inclined, as is also the guide against which the rack runs, and when the pin *p* is pushed to the top of the slot the rack is carried back, so that the car will pass freely by the pinion *m;* but when the pin is slid down to the bottom of the slot the teeth of the rack will be in position to engage with the pinion *m* as the car rises. Being in this position the engagement of the teeth will turn the pinion, and the pinion will actuate the rack *o*, and thereby close the door.

I claim—

1. In combination with the car and hoist-way, the lever-bar *f*, lever *k*, rails *c*, and notches *d e*, operating to arrest the falling or descending car, substantially as described.

2. In combination with the car *b* and landing-door, the door-rack *n*, sliding car-rack *o*, and pinions *m*, operating substantially as described.

CHARLES W. COLLYER.

Witnesses:
M. W. FROTHINGHAM,
JNO. M. TOWNSEND.