M. L. WYMAN.

ELEVATOR.

No. 174,172. Patented Feb. 29, 1876.

Fig. 1

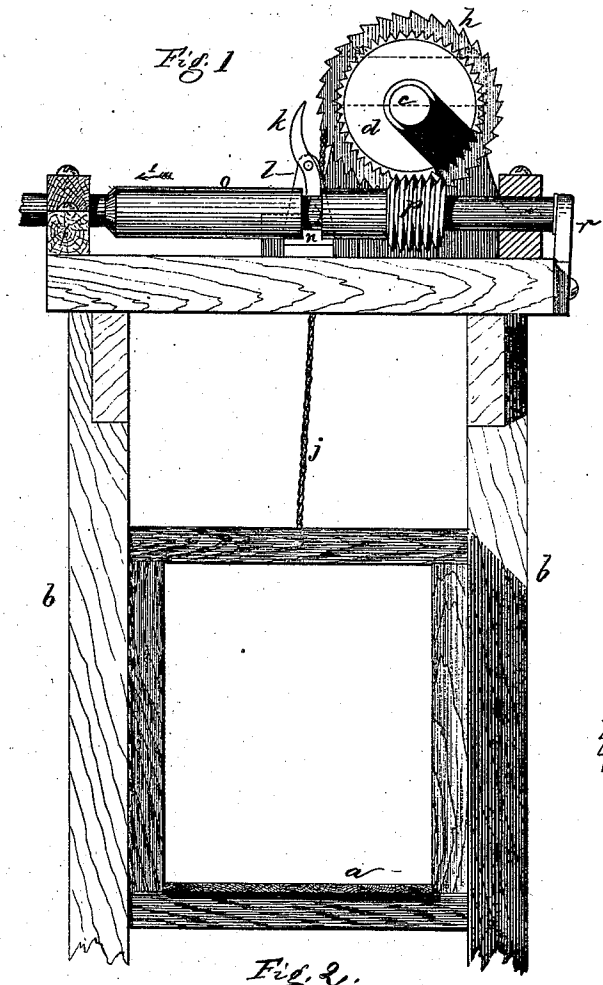


Fig. 3.

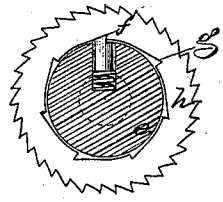
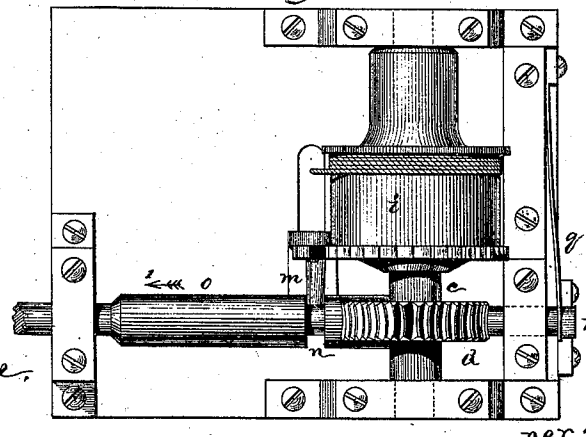


Fig. 2.



Witnesses.
C. H. Latimer.
W. J. Pratt.

Inventor.
Martin L. Wyman
per Lemby Gregory
Att'ys.

UNITED STATES PATENT OFFICE.

MARTIN L. WYMAN, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO HIMSELF AND CHARLES E. MOORE, OF SAME PLACE.

IMPROVEMENT IN ELEVATORS.

Specification forming part of Letters Patent No. **174,172**, dated February 29, 1876; application filed September 11, 1875.

To all whom it may concern:

Be it known that I, MARTIN L. WYMAN, of Boston, in the county of Suffolk and State of Massachusetts, have invented Improvements in Elevators, of which the following is a specification:

This invention relates to improvements in elevators; and consists in devices to prevent the unwinding of the suspensory when the descent of the car is for any reason obstructed, the operation being automatic and being thrown into action when the car is obstructed.

Figure 1 is a side view, and Fig. 2 a top view, of sufficient of an elevator to illustrate this invention; and Fig. 3 is a detail.

In the drawing, *a* is the car and *b* the guide or surroundings in which the car moves, they being of any well-known or ordinary construction. At, preferably, the upper portion of the building containing the elevator is placed, in suitable bearings, a shaft, *c*, on which is secured a worm-toothed wheel, *d*, and a hub, *e*, provided with a pawl-pin, *f*, adapted to engage teeth or depressions *g* in the inner face of the drum *i*, adapted to receive the suspensory *j*, one or more of any well-known kind, and also provided with teeth *h*, to be engaged by a pawl, *k*, shown as pivoted to a standard, *l*, and provided with a pin or arm, *m*, to enter a groove, *n*, in or to connect with a collar on the shaft *o*, which actuates the shaft *c* through a worm-gear, *p*, thereon, which engages wheel *d*. This shaft *o* is driven or rotated alternately in either direction by any well-known mechanism, and is allowed end play in its bearings, a spring, *q*, being arranged to press the shaft in the direction of the arrow 1, and a stop, *r*, or other device prevents the shaft moving too far in the opposite direction. The weight of the car on the suspensory, acting through the drum, causes the worm-toothed wheel *d*, acting through the worm-gear *p*, to press the shaft *o* in a direction opposite the arrow 1, and in such position the pawl *k* is held from contact with the teeth *h* on the drum *i*, and the suspensory always remains taut thereon. If the descent of the car is obstructed its weight no longer acts on the drum to cause the wheel *d* to press the shaft *o* against stop *r*, or in that direction, and then the shaft *o* is moved by the spring *q* in the direction of the arrow 1, and through its connection with the pawl *k* in any well-known way, in this instance a groove, *n*, the pawl *k* is thrown into engagement with the ratchet-teeth *h* of the drum *i*, and as the shaft *o* continues to rotate it turns the shaft *c*, and the pawl *f* rides over the teeth *g* in the drum, and does not move it. This pawl *f* may be pressed outward by a spiral or other spring, and instead of the pawl and ratchet *f g*, shown, any other well-known kind of pawl and ratchet may be employed.

Instead of the shaft *o*, at right angles to the shaft *c*, and its worm *p*, I might arrange at the rear of the shaft *c*, or at the right-hand side, Fig. 1, a shaft parallel with shaft *c*, and on it I would place a toothed wheel or pinion to engage a toothed wheel on *c* in the position of wheel *d*, and I would mount this shaft in bearings, so that when the weight of the car ceases to act through the drum *i* and shaft to keep the shaft in one position it should move under the action of a spring or otherwise and move a pawl to engage the teeth *h*.

I claim—

The combination of the hoisting-drum of an elevator and its shaft, connected, substantially as described, with a rotating shaft to actuate the drum-shaft and a pawl, the rotating shaft being adapted to move independently of its rotation and actuate the pawl to engage and hold the drum when the descent of the car is obstructed, substantially as described.

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

MARTIN L. WYMAN.

Witnesses:

THEO. P. BROWN,

T. G. SMITH.