

S. H. BEVINS & J. WEIS.
ELEVATORS FOR BUILDINGS.

No. 171,716.

Patented Jan. 4, 1876.

Fig. 1.

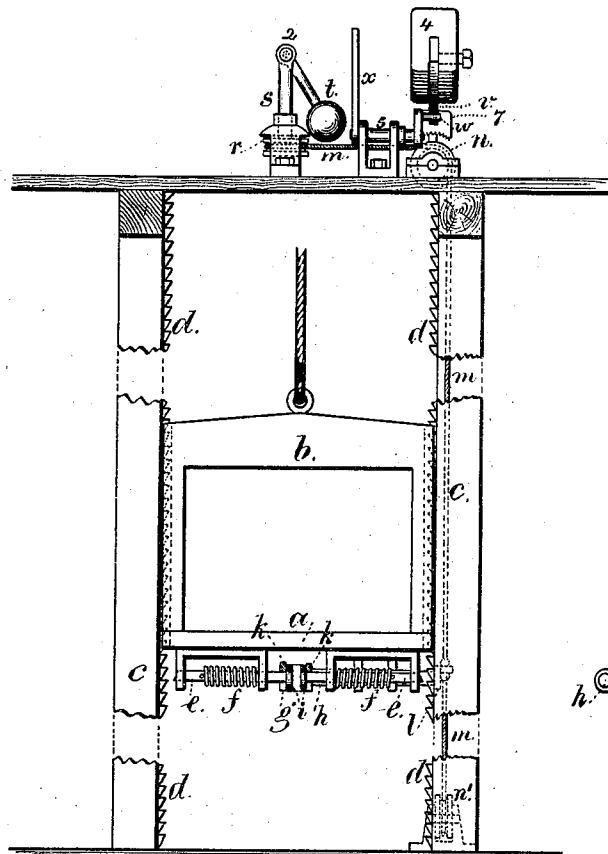


Fig. 4.

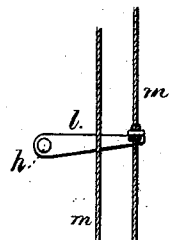


Fig. 3.

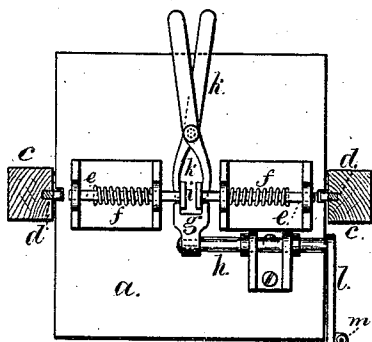
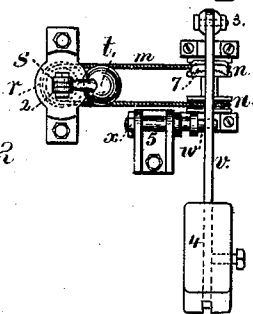


Fig. 2.



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UNITED STATES PATENT OFFICE.

SETH H. BEVINS, OF NEW YORK, N. Y., AND JOSEPH WEIS, OF JERSEY CITY, NEW JERSEY.

IMPROVEMENT IN ELEVATORS FOR BUILDINGS.

Specification forming part of Letters Patent No. **171,716**, dated January 4, 1876; application filed November 15, 1875.

To all whom it may concern:

Be it known that we, SETH H. BEVINS, of the city and State of New York, and JOSEPH WEIS, of Jersey City, in the county of Hudson and State of New Jersey, have invented an Improvement in Elevators for Buildings, of which the following is a specification:

Elevators for buildings have been made with safety appliances to regulate the speed by the action of a governor, and catches or pawls have been retained out of action by the hoisting-rope, and operated automatically in cases where the rope breaks.

Our present invention consists in a centrifugal hammer that, at ordinary speed, is inoperative, but which comes into action centrifugally when the speed increases and knocks aside a trip and brings into action the locking mechanism, so that when the car is in motion at ordinary speed the locking mechanism is unacted upon, but the moment the speed increases, as it does the instant the car commences to fall, the hammer knocks away the device that has kept the locking-pawls out of use, and they are liberated and hold the car. By employing this independent regulating device, the risk of accident is greatly lessened, because the safety appliance is brought into action when the maximum speed is increased from the slipping or breaking of a belt, or from any cause.

In the drawing, Figure 1 is a vertical section of the elevator, Fig. 2 is a plan of the centrifugal hammer and trip, and Fig. 3 is an inverted plan of the platform of the elevator.

The platform or car *a*, with its frame *b*, are moved up and down in the slides *c* by any suitable means. Upon the faces of the slides *c* are the racks *d*, and *e e* are sliding pawls upon the under side of the platform, that are forced outwardly into the rack-teeth by the springs *f* whenever the said pawls *e e* are disengaged from the device that retains them in their retracted position. We prefer and use the jaw *g* upon the shaft *h* for retaining these spring-pawls. The arms *i* of the pawls *e* are received within the jaw *g* when the pawls are withdrawn by the levers *k* or otherwise, and when the shaft *h* is partially turned the jaw swings away from these arms, and liberates

them and the pawls. The shaft *h* is in bearings upon the platform, preferably at the under side, and at the end of the shaft *h* a lever-arm, *l*, is attached, and connected with the endless rope or chain *m*, as shown in Fig. 4, that passes around the pulleys *n n'* at top and bottom of the elevator-well; and we remark that the trip and its mechanism may be applied at the top of the elevator-space, or at the bottom. We have shown it at the top. The pulleys or wheels *n n*, over which the rope or chain *m* passes, allow a portion of such rope to pass horizontally around the pulley *r* upon the vertical shaft *s*, upon which the centrifugal hammer *t* is applied, the handle of the same being connected to *s* by the hinge at 2, so that it may swing out more or less, according to the speed and centrifugal force. The brake-lever *v* is pivoted at 3 and weighted at 4, and in the normal condition it is held up out of the way by the blocking-arm *w* upon a shaft, 5, that is provided with a tripping-lever, *x*. The parts are so constructed and posited that at ordinary speeds the centrifugal hammer *t* revolves near to but does not touch the trip-lever *x*, and the friction of the jaw *g* that holds the locking-bolts is sufficient to cause the movement of the chain or rope and of the centrifugal hammer as the car or platform is moved up or down; but as soon as the speed of the hammer *t* is accelerated by the fall of the car, or its downward movement at a speed in excess of the maximum velocity, the hammer flies out, knocks away the trip, the brake-lever falls, its brake-block 7 catches and holds the rope or chain *m*, and the further movement of the platform causes the lever *l* to swing the jaws *g* away from the locking-bolts *e*, and they are liberated and hold the car by the racks *d*. This movement is more direct and rapid than the movements that depend upon governor-balls that rise gradually, and in so doing influence the brake mechanism as heretofore employed.

It will be apparent that if the revolving hammer and brake mechanism are upon the car, and one portion of the rope that runs over stationary pulleys at top and bottom of the elevator-well is attached to the lever *l*, as aforesaid, and the other portion runs around

the pulley of the centrifugal hammer, the brake mechanism will be as efficient in holding the rope and causing the descent of the car to liberate the locking mechanism, as in the position shown. The revolving hammer might act directly upon the mechanism that holds back the locking mechanism, so as to liberate the same, but we prefer to use the devices shown.

We claim as our invention—

1. The combination, with an elevator platform or car, and the locking pawls or bolts thereof, of mechanism to hold such locking device out of action, and a revolving hammer to liberate the locking mechanism when the maximum speed of such revolving hammer is exceeded, substantially as set forth.

2. The revolving centrifugal hammer and trip mechanism, in combination with the brake and rope or chain, and the mechanism for hold-

ing the locking bolts or pawls out of action, substantially as set forth.

3. The automatic locking-bolts *e*, placed beneath the platform, in combination with the jaw *g*, shaft *h*, and lever *l*, for holding or liberating such bolts, substantially as specified.

4. The rope or chain *m*, attached to the lever *l*, and passing around the respective pulleys *n n' r*, in combination with the centrifugal hammer *t*, the brake *7*, and the mechanism for liberating the automatic locking bolts *e*, substantially as specified.

Signed by us this 3d day of November, A. D. 1875.

SETH H. BEVINS.
JOSEPH WEIS.

Witnesses:

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