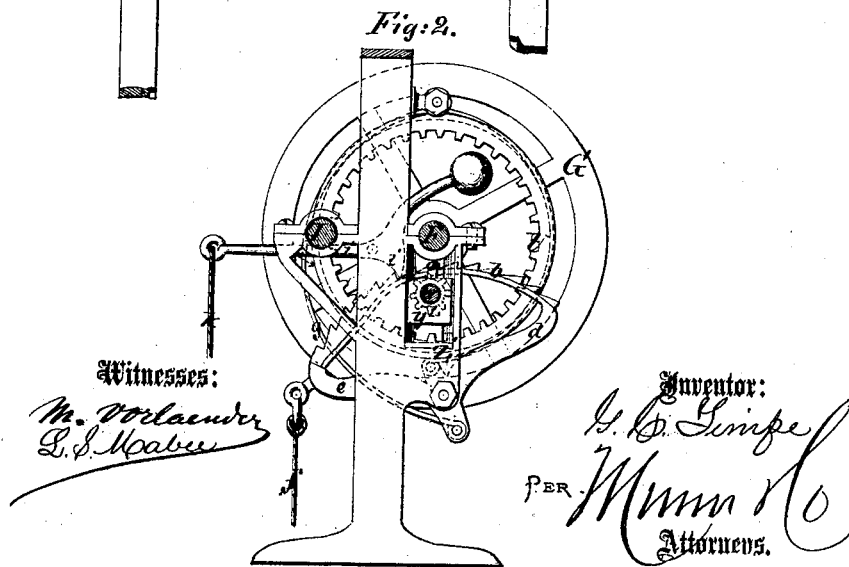
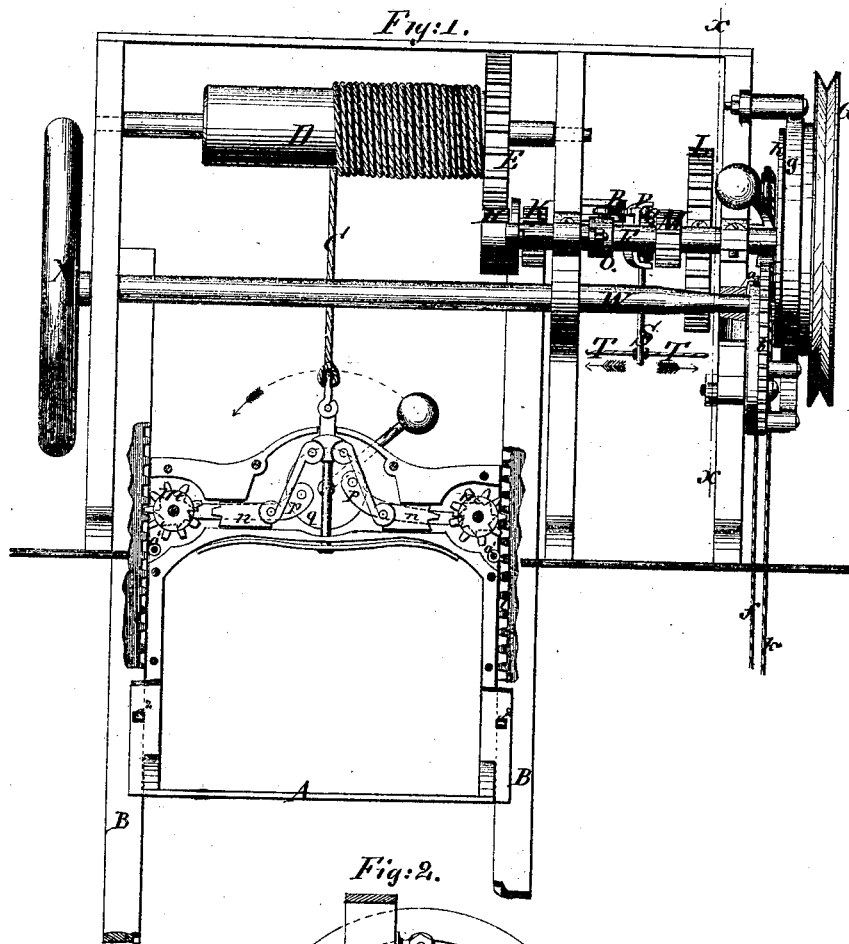


G. C. Timpe,

Elevator.

No. 109275.

Patented Nov. 15, 1870.



United States Patent Office.

GUSTAVUS C. TIMPE, OF NEW ORLEANS, LOUISIANA.

Letters Patent No. 109,275, dated November 15, 1870.

IMPROVEMENT IN ELEVATORS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, GUSTAVUS C. TIMPE, of New Orleans, in the parish of Orleans and State of Louisiana, have invented a new and useful Improvement in Elevators; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification.

This invention relates to improvements in apparatus for working elevator-platforms; and

It consists in the application of a balance-wheel for regulating the motion, in such a way that it may be readily ungeared when the platform is to be let down, the said ungearing being done by the brake-operating apparatus.

The invention also comprises an improved arrangement of differential gears and shifting devices therefor, for varying the connection according to the weight of the load.

It also consists in certain improved arrangements of checking apparatus, for arresting the platform in case the hoisting-rope breaks or becomes detached; and

It also consists in an improved arrangement of the toothed ways, on which the platform works, and the friction-rollers of the said platforms.

Figure 1 is a front elevation, partly sectioned, of my improved arrangements of operating-gear for working the elevator-platform; and

Figure 2 is a section of the same on the line *x x* of fig. 1.

Similar letters of reference indicate corresponding parts.

- A is the platform;
- B, the ways or guides along which it works;
- C, the suspending-rope; and
- D the drum for winding the rope.

The drum D is provided with a spur-wheel, E, by which it is geared with the shaft T of the hoist-wheel G, either by the pinion H on said shaft, or by the counter-shaft I, pinion K, wheel L, and pinion M, the pinion H being used when the load is light, and the counter-shaft and pinions K M and wheel L when the load is heavy, and greater leverage is required to work it.

For shifting the connection from one to the other of these different gears, the pinion H is arranged to slide on the shaft F, and the shaft I is arranged to slide in its bearings endwise; the pinion is connected to a sliding collar, O, on shaft F, which is connected by the lever P with a grooved collar, Q, on shaft I, said lever being pivoted to a support at R, and provided with a shifting-bar or handle, S, which may have cords T attached, and extending over suitable guide-pulleys

to the floors below, by which the lever P can be moved either way to disengage one set of gears and engage the other, when required.

The hoist-wheel is provided with a brake-rim, U, toothed on the inner face, in which a pinion, V, on the fly-wheel shaft W gears, to turn the fly-wheel X at a rapid rate at the time the platform is being hoisted, to continue the motion by momentum while the power is not applied to the hoist-rope, in the upward movement of the hands of the operator between the times of letting go and taking hold again.

As this wheel would interfere to a considerable extent with the downward movement of the platform, I have arranged it to be ungeared with the hoist-wheel through the medium of the brake-actuating or check-rope, the said arrangement being as follows:

The bearing *y* for the shaft is arranged in a support, *z*, so that it may be raised sufficiently above the position it occupies when the pinion V is gearing with the toothed rim U to disconnect the two; and, to raise it, a hooked projection, *a*, is attached to it, and arranged to hook over a smooth part of the top of the cam-shaped ratchet-bar *b*, attached at one end to the arm *d*, projecting from one end of the brake-lever *e*, and at the other end to the free end of the said brake-lever, as shown, so that, when the brake-lever is drawn downward by the operating-cord *f*, hanging from its free end, to force the brake-strap *g* down upon the brake-wheel *h*, the high part of bar *b* will be forced under the hook *a*, and draw the end of shaft W, with the pinion on it, up out of gear with the rim U.

A weighted holding-pawl, *i*, is so combined with this ratchet-bar *b* as to engage it at any position it may be drawn into, and hold the brake on the wheel until tripped by the cord *k*.

I propose to form the teeth *l* of the ways B, in which the locking-pinions *m* work, by casting the notches between them in the rails, so that the points will be flush with the side, or, at least, so as not to project beyond, so that the teeth joining the metal on each end will be greatly strengthened thereby, and be less liable to break in the event of the breaking of the rope, and the sudden locking of the pinions *m*; also, for providing a smooth front face for the long friction-rollers *a'*, which I place on the platform to lessen the friction.

I also propose to place the friction-rollers *a'* in the flanges of the vertical rails of the platform.

For locking these pinions, in addition to the ordinary spring-actuated locking-pawls *n*, I provide them with ratchet-hubs, as shown in dotted lines in fig. 1, in the teeth of which pawls *p*, connected to the disk *q*, will be caused to engage, by the weighted arm *r*,

pivoted on the cross-head of the platform, and carrying the said disk, when the said lever is turned to the side of the center, in which it is shown in the drawing; but, when the said lever is turned the other way, the pawls will be held out of connection with the said toothed hubs, which must be the case when the platform is to be moved down, and which will also generally be the case when the loads being raised are light, the pawls and weight being intended for heavy hoisting mainly, to keep the "back" strain off the men while hoisting, or, in case they should let the rope go, it also relieves the hoisting-rope to some extent of the strain.

It will be seen that my arrangement of the fly-wheel with the hoist-wheel answers nearly all the purposes of a counter-balance weight in hoisting the platform, while it has the advantage that the platform may be caused to move downward by gravity, (the balance-wheel being ungeared,) while it is necessary, when a counter-balance is used, to draw the platform down, or load it, so that it will overcome the weight.

Having thus described my invention,

I claim as new and desire to secure by Letters Patent—

1. The combination, with the hoist-wheel drum and platform of an elevator, of a fly-wheel, arranged to be disconnected by the check-rope and brake-lever, substantially as specified.

2. The combination, with the brake-lever, of the ratchet-bar *b*, weighted pawl *i*, and trip-cord *k*, substantially as specified.

3. The combination, with the gear-wheel *E*, of the drum-shaft and the hoist-wheel shaft of the sliding pinion *H*, sliding shaft *I*, wheel *L*, pinions *K* and *M*, and the shifting-lever *F*, all substantially as specified.

4. The teeth *l*, arranged within the faces of the ways *B*, and the platform-frame, provided with the rollers *a'*, working across the faces of the said ways, all substantially as specified.

5. The combination, with the platform and the pinions *m*, having the toothed hubs described, of the locking-pawls *p* and weighted levers *r*, substantially as specified.

GUSTAVUS C. TIMPE.

Witnesses:

J. G. BUNIENX,
GEO. L. FOLGER.