(No Model.)

L. DASO.

ELEVATOR.

No. 276,784. Patented May 1, 1883.

Fig. 1.

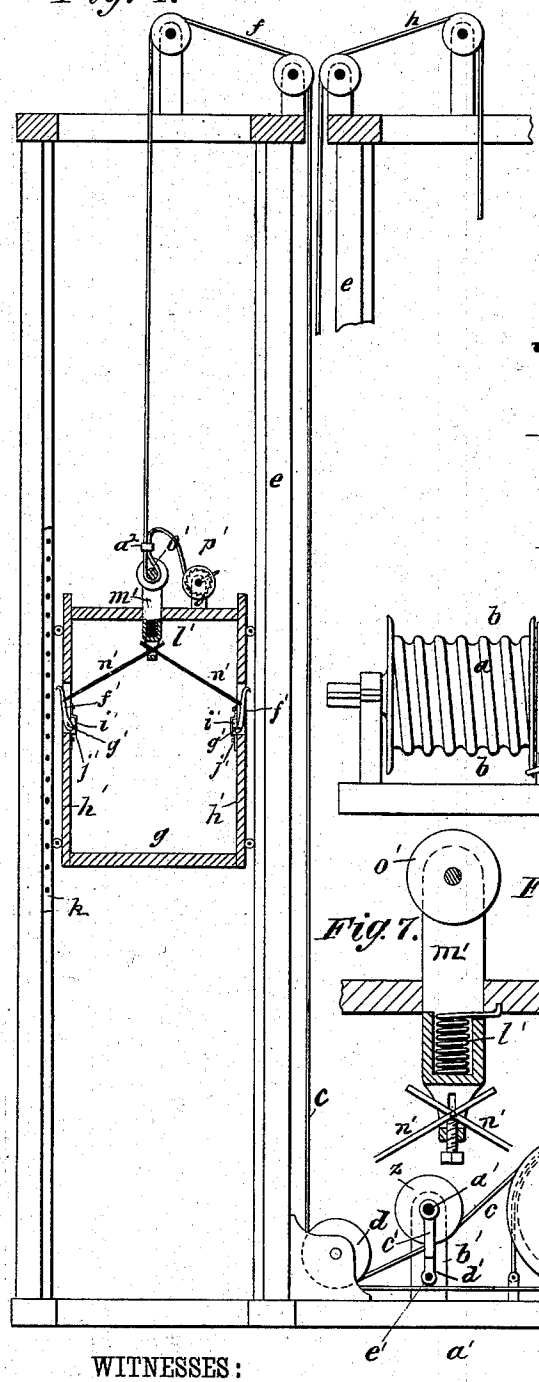


Fig. 6.

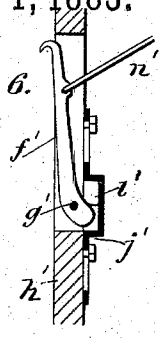


Fig. 3.

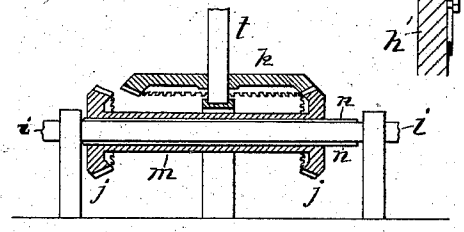


Fig. 2.

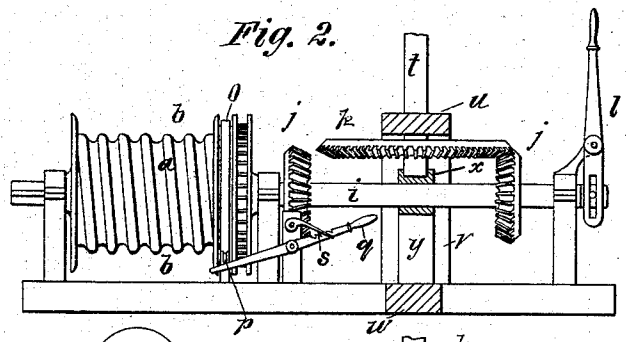


Fig. 4.

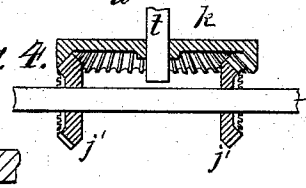
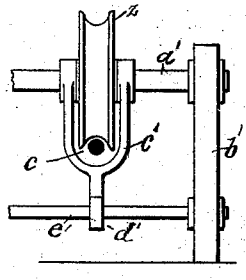


Fig. 7.

Fig. 5.



WITNESSES:

James G. Deemer
C. Sedgwick

INVENTOR:

L. Daso

BY Munn & Co.

ATTORNEYS.

N. PETERS. Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

LEVI DASO, OF PIONEER, OHIO.

ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 276,784, dated May 1, 1883.

Application filed February 24, 1883. (No model.)

To all whom it may concern:

Be it known that I, LEVI DASO, of Pioneer, in the county of Williams and State of Ohio, have invented a new and useful Improvement in Elevators, of which the following is a full, clear, and exact description.

My invention relates to double elevators to be worked in either direction by a main driver working continuously in one direction, the gears being shifted when the movements of the elevators are to be reversed; and the invention consists of improvements in the driving-gear, brake device, hoisting-rope contrivance, and in safety attachments for the platforms or carriages, all as hereinafter fully described.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is partly a side elevation and partly a sectional elevation of one of the elevators and platforms and the chain and hoisting-rope gear for both elevators. Fig. 2 is a side elevation of the driving-gear and drum contrivance. Figs. 3 and 4 are sectional elevations of modified forms of the driving-gear. Fig. 5 is a detail of the rope-guide, and Figs. 6 and 7 are details of the safety-catch devices.

The drum *a* has a spiral groove, *b*, in its periphery, around which the hoisting-rope *c* runs by one complete coil and parts of another, then passing under two guide-pulleys, *d*, and up along the elevator-ways *e* to the top, where one part, *f*, passes to the left to connect with platform *g*, and the other, *h*, goes to the right hand to connect with another platform, (not shown,) the coil on the drum shifting along it from end to end. The drum is to be turned first in one direction for hoisting one platform and then in the other direction for hoisting the other, and for this purpose its shaft *i* is provided with two bevel-pinions, *j*, to be geared alternately with the master-wheel *k*, the said pinions being on opposite sides of said wheel, so as to effect the reverse motions of the drum. When it is not important to economize space in the power apparatus, these pinions *j* may be arranged external to the toothed rim of the master-wheel, as in Fig. 2; but if the arrangement in smaller space is required, said pinions may be arranged internally to the toothed rim of said wheel to be arranged as in Fig. 4. In these two arrangements these pinions are represented as keyed fast to the shaft *i* and the shaft arranged to shift lengthwise by a lever, *l*, for reversing the motion; but a preferable arrangement will be that in Fig. 3, in which the pinions *j* are connected to a sleeve, *m*, which is connected to the shaft by two splines, *n*, along which the sleeve may shift, the sleeve to be in this case connected to the lever.

A friction-brake, *o*, is to be employed in connection with the drum, to be used when the elevator is to be employed for descending loaded and ascending light, or when a loaded platform is to be held until the driving-gear can be shifted, with which I propose to arrange the compound-lever contrivance *p q* and the holding-pawl *s*, the latter having a forked end to straddle lever *q*, so as to be kept in place thereon. For enabling the attendant to manipulate the brake-lever *q* and the reversing-lever *l* by his hands, respectively, without changing from one place to another, I have arranged lever *q* to extend toward reversing-lever *l* from lever *p*, to be in suitable proximity to it for the purpose.

The power is to be applied to the driving-wheel *k* by a sweep attached to its shaft, the shaft being supported by a bearing in a cross-bar, *u*, supported on the posts *v*, set up on the bed-sill *w*, and said shaft has a step at *x* in the top of a bearing, *y*, of the shaft *i*, said bearing *y* being suitably supported on the bed-frame to relieve the shaft *i* of the weight of the shaft *t*. For depressing the part of the rope that runs to the upper side of the drum to lower it for the horse that works the sweep to pass over, I have a loose or idle pulley, *z*, mounted on a stationary rod or shaft, *a'*, supported in standards *b'*, the pulley being contrived to shift along the shaft as the rope traverses the drum from end to end; and for a guide to keep the rope from running off the pulley, a clevis-shaped yoke, *c'*, is fitted on the rod to hang down around the rope, and it has an extension, *d'*, which has an eye through which another rod, *e'*, passes to keep the guide in position, said rod *e'* being also supported in the uprights *b'*.

The safety attachment to the platform consists of the hook, pawls *f'*, pivoted at *g'* in slots of the uprights *h'* of the carriage, with rubber springs *i'*, pressed against them by

keepers j' to thrust the hooks into engagement with the racks k', when the rope breaks and allows the spring l' to thrust the draw-bar m' down to release the pawls which are connected to the draw-bar by the rods n', which hold the pawls out of engagement with the racks while the platform is suspended by the ropes. It will be seen that these hook-pawls will pull the ways e to the platform, and thus more certainly lodge it on them when the rope breaks than pawls which have a tendency to thrust the ways from the platform by spreading them apart. I connect the ropes to the platform by passing them under roller o' on the draw-bar m' and doubling them back together to be firmly secured by the clamp a^2; and to take up the slack or surplus rope I provide a drum, p', mounted on the top cross-bar of the platform, to wind up the slack, and having a ratchet to hold it when the rope is all wound on the drum p', as will be readily understood.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a hoisting or elevating apparatus, the combination of the cage or platform, the roller o', the ratchet-and-pawl drum p', and the rope c, wound around the roller o' and doubled back and connected to itself by the clamp a^2, said rope being carried around the pawl-and-ratchet drum p', substantially as and for the purpose set forth.

2. In a hoisting or elevating apparatus, the combination of the depressing guide-wheel z and rope-guide c' with its forked ends adapted, with the wheel, to slide on a shaft, a', and its lower end to slide on a rod or bar, e, substantially as and for the purpose set forth.

3. The shaft t of the driving-power apparatus, having the step x in the bearing y of the shaft i, substantially as described.

4. In an elevator, the combination, with the sliding spring draw-bar m', of the spring-pawls f, hung in the carriage, and the rods n' n', connected to said pawls and to the draw-bar at their points of crossing, substantially as and for the purpose set forth.

5. The combination of hook-pawls f', rubber springs i', keepers j', and the draw-bar m' with the elevator-platform, the pawls being connected to the draw-bar and the draw-bar being arranged to drop with relation to the beam of the elevator-platform when the rope breaks, substantially as described.

6. In an elevator, the combination of two carriages or platforms, a continuous hoisting-rope, and a drum having a spirally-grooved surface, said rope being adapted to travel on said drum from end to end, and one branch thereof passed to the right to one carriage and the other branch passed to the left to the other carriage, substantially as and for the purpose set forth.

LEVI DASO.

Witnesses:
FRANK SWEETMAN,
H. B. HALL.