

G. C. TIMPE.
Elevators.

No. 135,454.

Patented Feb. 4, 1873.

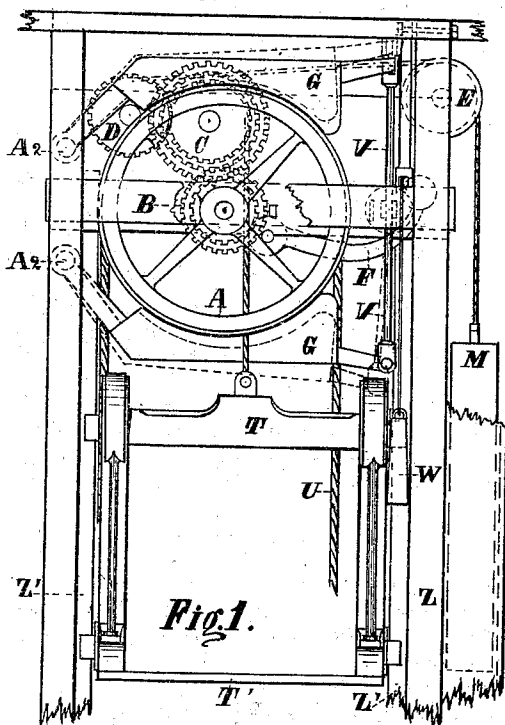


Fig. 1.

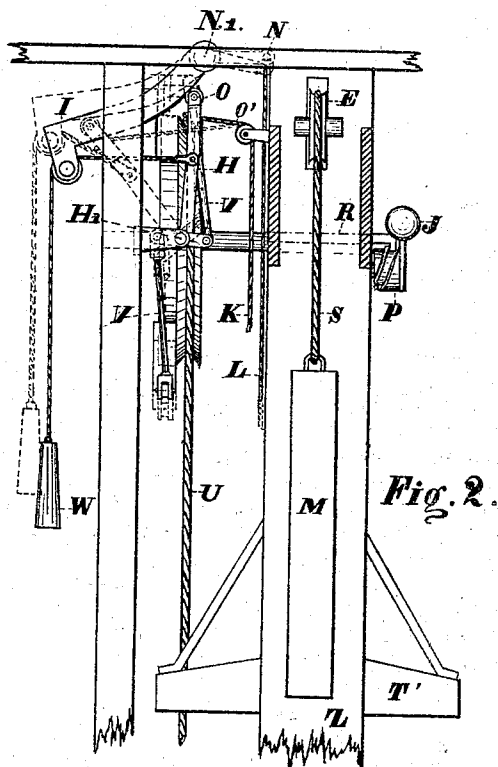


Fig. 2.

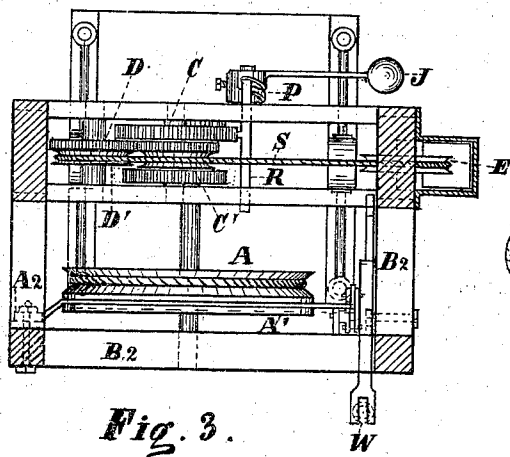


Fig. 3.

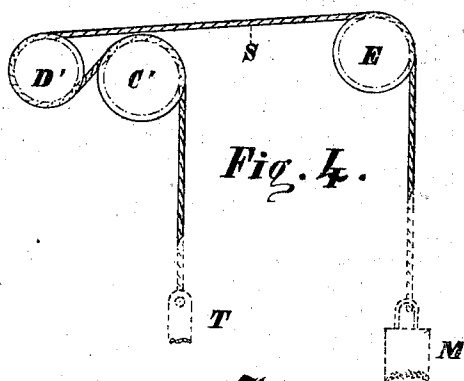


Fig. 4.

Witnesses.

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UNITED STATES PATENT OFFICE.

GUSTAVUS C. TIMPE, OF NEW ORLEANS, LOUISIANA.

IMPROVEMENT IN ELEVATORS.

Specification forming part of Letters Patent No. 135,454, dated February 4, 1873.

To all whom it may concern:

Be it known that I, GUSTAVUS C. TIMPE, of the city of New Orleans, parish of Orleans, State of Louisiana, have made certain new and useful Improvements in Elevators, as will more fully appear in the annexed drawing, which is made a part of this specification, in which—

Figure 1 is a front view of the elevator with portions of the frame-work broken away for the purpose of showing the gear-wheels, &c. Fig. 2 is a side elevation of the same. Fig. 3 is a plan of the same. Fig. 4 is a diagram, showing the arrangement of the hoist-rope or cable with the different drums and guide-pulley.

The first part of my invention relates to the combination and arrangement, in a hoisting-machine, of drums upon the second and third geared shafts, and a rope or cable running over and embracing the drums, and attached to the platform or cage in such a manner as to raise and lower the platform or cage, the object of this part of my invention being to secure greater durability and safety in working the machine—viz., by having the hoist rope or cable running over and embracing a part of the circumference of each drum. Then, when the platform or counterpoise weight reaches either its highest or lowest limit of travel, the hoist rope or cable is instantaneously slackened and loosened on the drums, and they can continue to revolve without damage to anything. The second part of my invention relates to the combination and arrangement of a brake-pulley, to which is secured a grooved driving-wheel, and pinion-wheels, and geared wheels with another gear-wheel. The object of this is to enable me to control the machine in all positions—viz., in the fast, slow, or counterpoise movement, or in its transit from one to the other. The third part of my invention relates to the combination and arrangement of devices to actuate the double brakes, and the positive pawling or locking of them when open from or closed on the annular flange on the driving-wheel.

In relation to the drawing, similar letters indicate corresponding parts in all of the figures.

A designates the driving-wheel. The periphery of this wheel is grooved for the reception

of the hand rope or cable U, with which to operate it when it is desired to elevate or lower the platform or cage T'. Upon one side of this wheel is constructed an annular flange, forming a drum, A¹, around which are the two semi-curved friction-brakes G G, both of which are pivoted to the frame at A² A², and their vibrating ends are each articulated to one of the ends of each of the two connecting-rods V V. Said rods, each at their other ends, are articulated to their respective ends of the horizontal part of the inverted T-lever H, which is journaled to the frame by a lug at H', and is actuated to close the brakes together by hauling on the tripping-cord K, which is attached to the vertical leg. The office of the vertical leg of the inverted T-lever is, viz.: First, a weighted pawl or lock to hold the brakes together in a closed position on the annular flange; or reverse the motion, and it pawls or locks them open. This reverse motion is given by pulling on the tripping-cord L, which cord is attached at N to the short end of the double-ended weighted lever I. This double-ended lever is journaled at N', and has an opening longitudinally with it at its long end for the purpose of allowing the travel of the bight of the line that suspends the weight W. The other end of this line is secured to the vertical leg of the inverted T-lever; and the top end of the vertical leg travels in its oscillations from a perpendicular to an angle on either side from the perpendicular, and immediately under and in direct contact with the long end of the double-ended lever; and the double-ended lever, in conjunction with its weighted end, serves as a compensating-pawl, to compensate for the wear of the rubbing-face of the brakes, keeping them constantly up to the face of the annular flange automatically. B designates a large and small pinion-wheel on the driving-wheel shaft, and connected to revolve with the shaft by a feather-key, and these pinion-wheels are actuated laterally on the shaft by a forked shifter projecting out from the body of the sliding shaft R. This forked shifter engages with and between two annular collars on the pinion-wheel boss, and receives its lateral motion by the semi-revolution of the worm P on lever F and ball J. The sliding shaft R has square journals to slide on, and the end of the shaft is provided with a

right-angle projection fitting in worm P. The worm P is journaled to the frame in such a manner that its ribs run parallel with the face of the pinion-wheels, so that by shifting or revolving the lever F from one horizontal position to the other the pinion-wheels are shifted laterally, and results in fast or slow motion, as desired, and it is communicated to the compound gear-wheels C on the second shaft, and on this second shaft is a concave-faced drum, C', for the reception of the bight of the hoist rope or cable S to embrace in its travels. The gear-wheel on this shaft gears in and actuates the single gear-wheel D on the third shaft. This shaft has fitted on it a concave-faced drum, D', for the reception of the bight of the hoist rope or cable S to embrace in its travels, and its end is continued on over the guide-pulley E, and the end is then secured to the counterpoise weight M while the other end of the hoist rope or cable is secured to the platform or cage at the cross-piece T. This platform is constructed in any of the well-known ways, and travels between the vertical guide-posts Z, which have ribbons or guide-ways on their faces, as shown at Z'. The frame-work that supports the machinery can be of a shape as shown at Fig. 3, resting on the vertical guide-posts, as is shown in Fig. 1, or it can be built to suit the wants of the occasion, and in case of a mining-shaft, then the frame supporting the machinery would overhang the shaft of the mine, and the guide-posts would be superseded by guides of wire or other rope, or small metallic pipes jointed together and securely anchored at the bottom of the shaft with their upper ends well secured at the surface. This general arrangement makes a very cheap and simple elevator. It will be observed in the

diagram, Fig. 4, that the hoist rope or cable, in its windings in combination with the gear-wheels and drums on the same shafts, has embracing properties of more than thirty-two times the avoirdupois of the counterpoise weight, and it will also be observed that the hoist rope or cable in its travels is at all times in line vertically with the center of the cage or platform, and that no two parts of the hoist rope or cable come in contact with each other, thus preventing fouling and wear; and

What I declare is new and useful, and desire to secure by Letters Patent, is—

1. The combination and arrangement of the pinion-wheels B on the driving-wheel shaft with geared wheels C, drum C', and gear-wheel D and drum D', the whole arranged and operating in connection with the hoist rope or cable of a cage or platform, substantially as described, and for the purposes set forth.

2. The combination of the driving-wheel A with annular flange A', double brakes G G, rods V V, and inverted T-lever H, all constructed substantially as described, and for the purposes set forth.

3. The combination and arrangement of the inverted T-lever H with the double-ended lever I, trip-cords K and L, and weight W, all constructed substantially as described, and for the purposes set forth.

4. The combination and arrangement of the worm P, lever F, and ball J, with the shaft R, all constructed substantially as described, and for the purposes set forth.

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Witnesses:

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