(No Model.) 2 Sheets—Sheet 1.

S. T. LEWIS.

ELEVATOR.

No. 568,576. Patented Sept. 29, 1896.

Fig. 1.

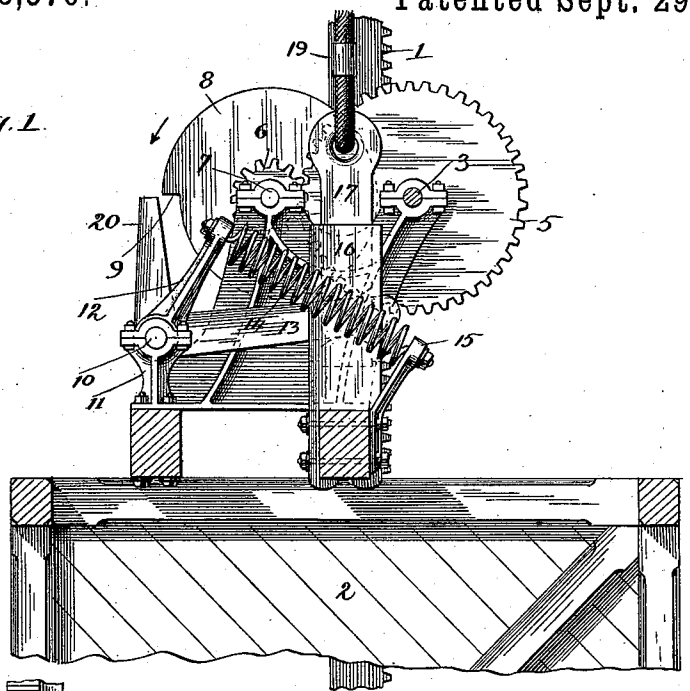
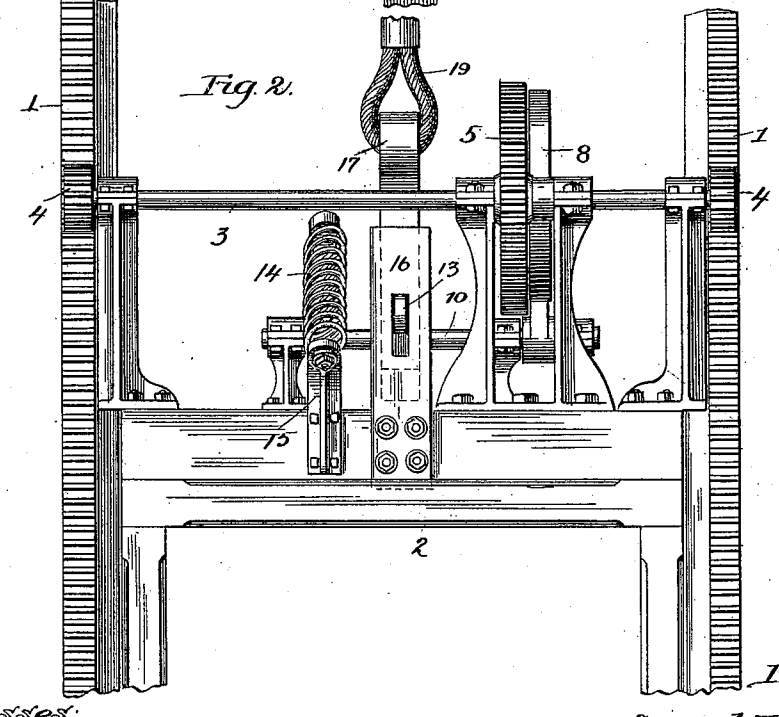


Fig. 2.



Witnesses:
H. B. Hallock.
S. J. Williamson

Inventor
Samuel T. Lewis
by Geo. N. Holgate
Attorney

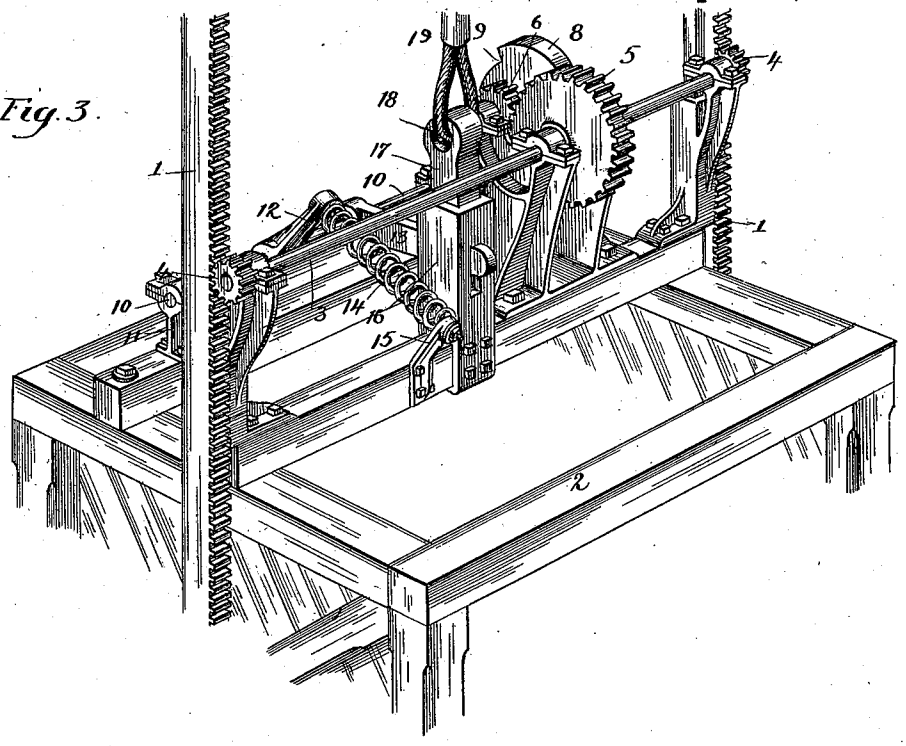
(No Model.) 2 Sheets—Sheet 2.

S. T. LEWIS.

ELEVATOR.

No. 568,576. Patented Sept. 29, 1896.

Fig. 3.



Witnesses.
H. B. Hallock.
O. Williamson

Inventor
Samuel T. Lewis
by Geo. W. Hodgate
Attorney

UNITED STATES PATENT OFFICE.

SAMUEL T. LEWIS, OF PHILADELPHIA, PENNSYLVANIA.

ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 568,576, dated September 29, 1896.

Application filed April 14, 1896. Serial No. 587,537. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL T. LEWIS, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Elevators, of which the following is a specification.

My invention relates to a new and useful improvement in safety attachments for elevators, and has for its object to provide a device of this character which when applied to an ordinary elevator-car will preclude the possibility of said elevator-car dropping should the lifting-cable be broken.

With these ends in view my invention consists in the details of construction and combination of elements hereinafter set forth, and then specifically designated by the claims.

In order that those skilled in the art to which this invention appertains may understand how to make and use the same, I will describe its construction and operation in detail, refering by number to the accompanying drawings, forming a part of this specification, and in which—

Figure 1 is a sectional elevation of a portion of an elevator having my improvement applied thereto; Fig. 2, a view taken at right angles to Fig. 1; Fig. 3, a perspective of the upper portion of an elevator, showing the proper relative position of the gears and several operating parts.

Rack-bars 1 are located within the shaft in which the elevator-car 2 is adapted to travel, and said elevator-car is provided with suitable bearings in which is journaled the cross-shaft 3, having secured upon its ends the pinions 4, adapted to mesh with said rack-bars, and also secured upon the shaft is a gear-wheel 5, which meshes with the pinion 6, the latter being secured upon the short shaft 7, journaled in suitable bearings and carrying a disk 8, whose perimeter is a scroll arranged to produce a shoulder 9 for the purpose hereinafter explained.

10 is a shaft journaled in the bearings 11, and upon this shaft is secured the levers 12 and 13, the former serving as an arm to which one end of the spring 14 is attached, the other end of said spring being attached to a post 15. The action of this spring is to draw the lever 12 forward. The outer end of the lever 13 projects through the housing 16, in which are formed suitable slots for the reception of said lever, and in this housing is guided a draw-bar 17, through which the lever 13 also passes. With the upper end of the draw-bar is formed an eye 18, by means of which the cable 19 is attached to said bar for the purpose of raising and lowering the elevator-car.

20 is a dog rigidly secured upon the shaft 10, and the nose of this dog extends within close proximity to the perimeter of the disk 8, so that when the weight of the elevator-car is supported by the cable the draw-bar will be moved upward to its limit, which is determined by the end of the lever 13 striking against the upper end of the slots through which it passes, and when the lever 13 is in this position the dog 20 will be held out of contact with the disk 8 against the action of the spring 14, leaving said disk free to revolve during the up-and-down movement of the elevator-car, which revolutions will be occasioned by the pinion 4, traveling in the rack-bars, but should the draw-bar be relieved of the strain incident to the supporting of the elevator-car by the cable on account of the breakage of the latter the spring 14 will draw the lever 12 forward, which will revolve the shaft 10 sufficiently to bring the nose of the dog 20 into contact with the perimeter of the disk 8, so that when the latter is caused to revolve in the direction of the arrow by the downward movement of the elevator-car the shoulder 9 will strike against said nose and arrest the revolutions of said disk, which, on account of its being geared with the shaft 3, will prevent the latter from revolving, and which in turn will prevent the descent of the elevator by the meshing of the pinions 4 with the rack-bars, as will be readily understood. From this it will be seen that an elevator having my improvement attached thereto can fall but a few inches should the cable at any time break, since the relative revolutions of the disk 8 and pinions 4 are four to one.

Having thus fully described my invention, what I claim as new and useful is—

1. In a device of the character described, rack-bars, a car, a shaft journaled thereon carrying pinions meshing with said racks, a gear-wheel secured on the shaft, a pinion

meshing with the gear and carrying a disk, a sliding draw-head and means for engaging the disk when the strain is released from the draw-head, as and for the purpose described.

2. The herein-described combination of an elevator-car, rack-bars upon either side thereof, pinions meshing with said bars, a shaft upon which said pinions are secured, said shaft being journaled in suitable bearings attached to the elevator-car, a gear-wheel secured upon said shaft, a pinion 6 with which said gear meshes, a disk 8 secured upon the same shaft with the last-named pinion, a shoulder formed upon the perimeter of said disk, a dog adapted to engage said shoulder, a shaft upon which said dog is secured, a spring-actuated arm also secured upon the last-named shaft, an arm 13 carried by the same shaft, a housing secured to the top of the elevator-car, a draw-bar guided within said housing to which the lever 13 is connected, a supporting-cable secured to the upper end of the draw-bar, whereby the weight of the elevator-car is caused to hold the dog out of engagement with the disk, substantially as and for the purposes set forth.

In testimony whereof I have hereunto affixed by signature in the presence of two subscribing witnesses.

SAMUEL T. LEWIS.

Witnesses:
S. S. WILLIAMSON,
MARK BUFORD.