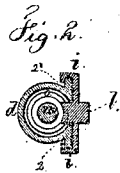
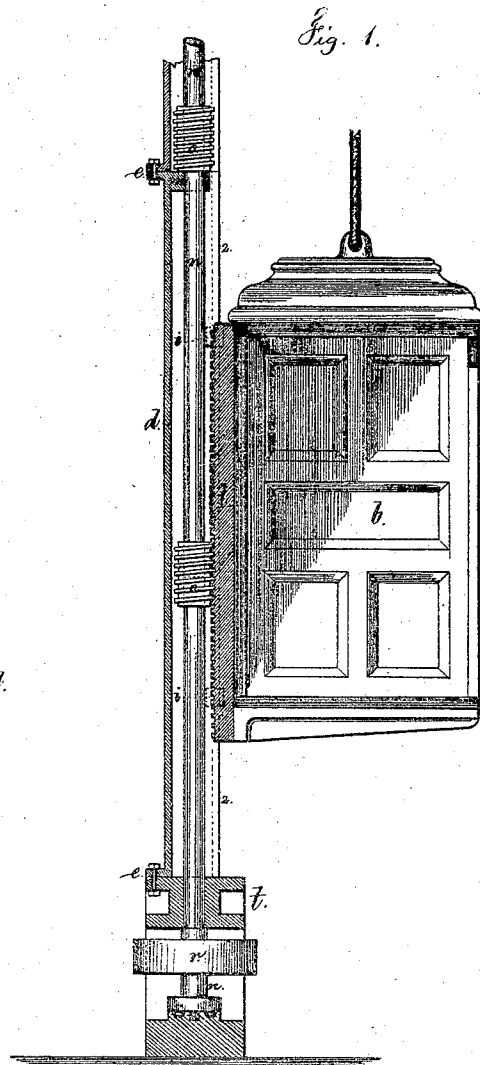


L. ATWOOD.

Improvement in Elevators..

No. 127,138.

Patented May 28, 1872.



Witnesses:

Chas. H. Smith
Geo. A. Walker.

Leonard Atwood
Lemuel W. Pearell atty.

L. ATWOOD.
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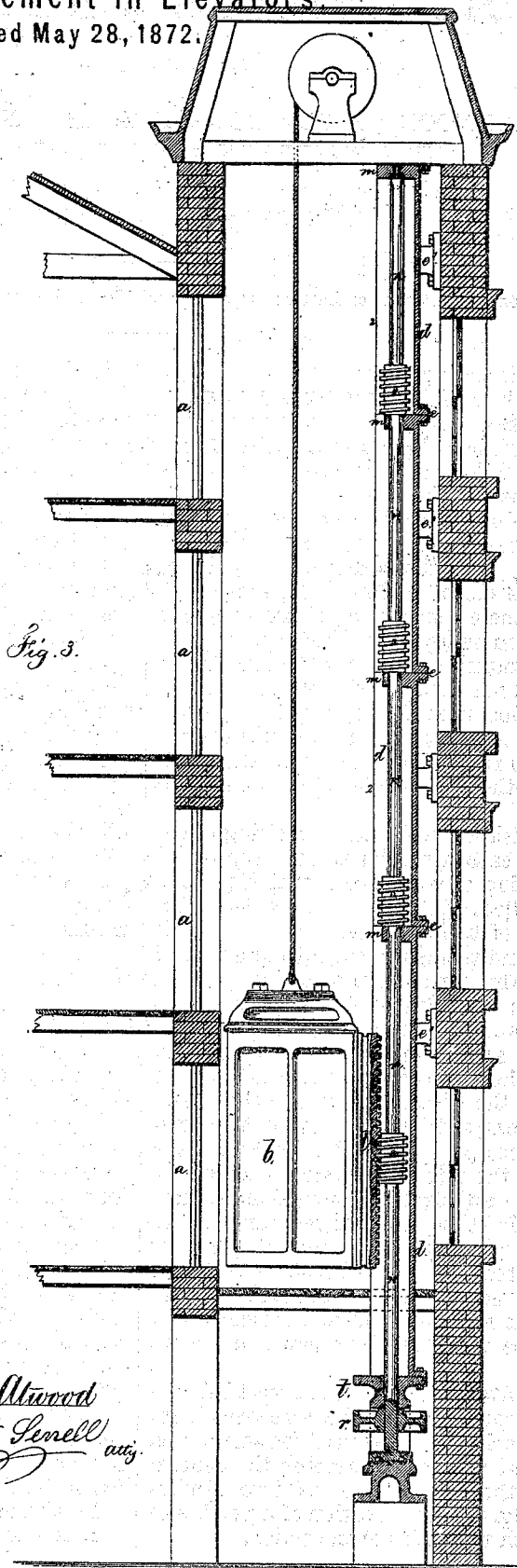
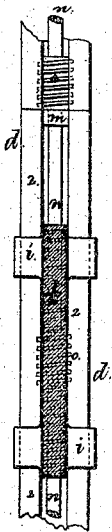


Fig. 3.

Fig. 4.



Leonard Atwood
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UNITED STATES PATENT OFFICE.

LEONARD ATWOOD, OF NEW YORK, N. Y., ASSIGNOR TO GEORGE W. BROWN
AND I. SHERBURN ATWOOD, OF SAME PLACE.

IMPROVEMENT IN ELEVATORS.

Specification forming part of Letters Patent No. 127,138, dated May 28, 1872; antedated May 11, 1872.

To all whom it may concern:

Be it known that I, LEONARD ATWOOD, of the city and State of New York, have invented an Improvement in Elevators for Buildings, and the following is declared to be a correct description of the same.

Elevators for buildings have been made by a vertical screw-shaft at one side of the platform or car, said shaft running the entire length of the elevator; but great expense is involved in the construction of screws of this character, and many difficulties are experienced in mounting the same so that the car or platform will not tend to bend said screw.

My invention is made to lessen the cost of the screw, to support the same at suitable distance, and to relieve said screw of all lateral strain that otherwise would tend to bend the same.

I accomplish these objects by making use of a stationary case attached to and supported by the building or structure in which the elevator is applied. This case serves two purposes: first, of a slide for the car to keep it in position and to sustain the lateral strain or leverage of the car as it projects at one side of said case; and second, of a support for the screw-shaft and the screw-sections upon said shaft. The screw-sections act upon a rack that is attached to the car, and is of greater length than the distance from one screw-section to the next, so that one screw-section commences to act upon the said rack before the other end of the said rack passes either above or below the adjacent screw-section, according to the direction in which the car is being moved. In consequence of employing screw-sections instead of a continuous screw, the shaft of the screw can be supported by the case between such sections, and the screw and shaft can be much smaller than heretofore necessary.

In the drawing, Figure 1 is a vertical section of the case carrying the screw-sections; Fig. 2 is a horizontal section of the same; Fig. 3 is a vertical section illustrating the general features of the elevator as fitted into a building; and Fig. 4 is an elevation of a portion of the case with the rack-bar in section.

In the building, the proper openings are left through the floors, and these should be inclosed, except where doors are provided, as shown at *a a*, and the car *b* should be provided with a wire rope passing over a pulley, and counterpoised either by a weight or by a second car, that descends as the first car ascends, and the reverse.

The metallic case *d* is made in suitable lengths, with flanges *e*, so that these lengths are bolted together. This case is to extend the length of the elevator, and supported by being built into the brick-work or by suitable supports or connections *e'* to the building. The bar *b* is made with guides *i i* sliding upon the flanges *2 2* of this case *d*, or such guides might pass into the case, the flanges *2 2* being inward instead of outward; in either instance the case *d* has a vertical opening through its side the entire length, in which the rack-bar *l* slides, and this rack-bar is connected to the guides *i i* and to the car *b*. Within the case *d* there are journal-boxes *m*, at suitable distances apart, that receive the vertical shaft *n*, and upon this shaft are the screw-sections *o o*, placed at a distance apart less than the length of the rack-bar *l*, so that said rack-bar will always be in gear with one of the screws, and thereby the car will be either raised or lowered, according to the direction of the revolution of the screw.

I prefer to make the shaft *n* in lengths the same as those of the case *d*, and place the screw-sections so as to rest upon the upper journal-box of each length of case, and by entering the upper end of the shaft half-way through the said screw-section, and the lower end of the next length of shaft passing into said screw-section, the shafts are coupled together by the screw; and I remark that keys may be used to connect the parts, or the shafts may be prismatic where the screws are applied.

The means for rotating the shafts and screw-sections may be of any desired character. I have shown a pulley, *r*, and this is within the frame *t*, below the case *d*.

I claim as my invention—

1. A stationary case, forming slides for the

guides *i* upon the car or platform, and receiving the screw for moving such car or platform, substantially as set forth.

2. The case *d*, made of sections bolted together, and containing journal-boxes, in combination with the shaft *n* and screw-sections, substantially as set forth.

3. The screw-sections *o o*, forming couplings for the lengths of shafting *n*, and resting upon

bearings within the case, that is made in sections bolted together, substantially as set forth.

Signed by me this 5th day of October, A. D. 1871.

LEONARD ATWOOD.

Witnesses:

GEO. T. PINCKNEY,

CHAS. H. SMITH.