(No Model.)

# O. D. WOLCOTT.

## ELEVATOR.

No. 306,453. Patented Oct. 14, 1884.

Fig. 1.

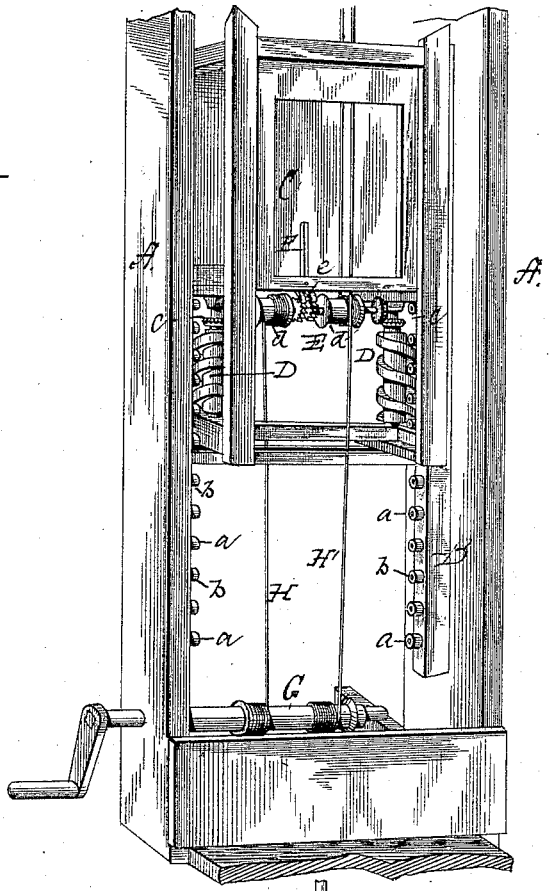
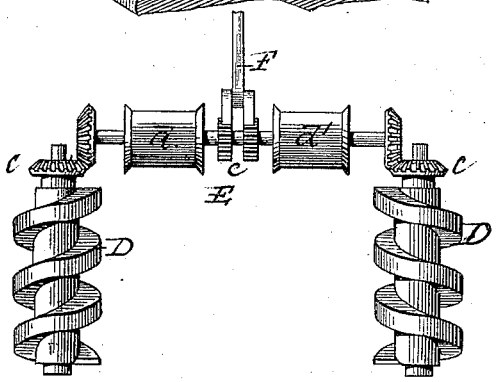



Fig. 2.




WITNESSES
F. L. Ourand
E. G. Pritchard

INVENTOR
O. D. Wolcott.
by A. G. Hopkins.
Attorney.

# UNITED STATES PATENT OFFICE.

ORVILLE D. WOLCOTT, OF CEDAR RAPIDS, IOWA, ASSIGNOR OF THREE-FOURTHS TO RICHARD B. TOMLINSON AND WILLIAM W. SMITH, BOTH OF SAME PLACE.

## ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 306,453, dated October 14, 1884.

Application filed August 27, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, ORVILLE D. WOLCOTT, a citizen of the United States of America, a resident of Cedar Rapids, in the county of Linn and State of Iowa, have invented a new and useful Elevator, of which the following is a specification.

My invention relates to improvements in hoisting apparatus or elevators of that class specially adapted to convey articles and objects in a vertical direction, either in descent or ascent; and the object of the improvements is to provide a means of the kind named which will accomplish the purposes intended with certainty, which is simple in construction and easily controlled in its movements, it being especially intended to construct a machine of the kind stated which in case of accident to the connections of the moving power shall not be precipitated to bottom of the line of travel.

The invention is fully made known and described in the following description thereof, in connection with the accompanying drawings, and is specifically pointed out in the claims hereinbelow made.

In the accompanying drawings, forming a part of this specification, Figure 1 is a perspective view of the elevator, in which are shown all the parts; and Fig. 2 is a view of the gearings and screws.

The letter A represents the side timbers or supports, which are firmly fixed at both ends, and also secured against liability to spread. To the inner face of each of these timbers is fastened a guide-rail, B, and in these latter are safely set a line of headed studs, *a*, provided with movable washers or collars *b*, the object being to give a movable bearing-surface for the side screws of the cage, and thus lessen the friction between the contacting parts.

The letter C represents the cage, which may be of any suitable construction so far as its receiving-chamber is concerned. The lower part of the cage is preferably made, as shown, by leaving the corner-pieces of the frame to extend down below the bottom of the chamber and securing the ends by cross-pieces, and further strengthening these parts by means of other cross-pieces so placed that they shall serve as the bearing-bases of the side screws, substantially as shown.

The letter D represents endless screws having their ends disposed in bearings fixed to the bottom of the cage proper and on the cross-pieces at the bottom of the frame. Each of these screws is arranged to properly engage with the studs in the side rails of the frame and formed with bevel-gearing at the upper part, as shown at *c*. Arranged in bearings fixed to the under side of the bottom of the cage is a shaft, E, having bevel-gear on each end to engage with those on the endless screws, and also provided with cord-pulleys *d d'*, and in the central portion of this shaft E are ratchet-wheels *e*, for a purpose hereinafter stated. Pivotally secured to the bottom of the cage is the lever F, with the handle extending upward, and the lower end which is formed into a pawl extending below the bottom and disposed so as to engage with the ratchets on the shaft E. The object of this lever, in connection with the ratchets on the shaft, is to provide means, in case the power breaks or is inoperative from any cause when the cage is in progression in either direction, for the occupant to descend. The action of the lever on the ratchets will turn the shaft and operate the machinery, and thus lower the cage to the desired locality.

The letter G represents a shaft secured at the bottom of the side frames. I have represented the power-shaft in the drawings as having attached thereto a crank as the means for turning the shaft; but it is apparent that any other means may be applied to turn this shaft and communicate motion to the elevator proper. The cords H H' are secured to this power-shaft, and from thence extend to the cord-pulleys upon the horizontal shaft arranged beneath the bottom of the cage, being disposed upon the power and about the cord-pulleys, so that the mechanism shall be forcibly exerted either in descent or elevation of the elevator. I have shown one of the cords extended through the chamber of the elevator and set about a pulley, K, arranged upon journals at the top of the frame, thereby providing a means for manipulating or mov-

ing the mechanism from the inside of the chamber.

It will be observed that while the movements of the cage and the mechanism carried by it are readily controlled by the power applied, as shown, in either direction, yet in any case of accident to the connections between the power and the mechanism carried by the elevator there is no liability or danger of the elevator being precipitated or of its occupants or contents being jeopardized by such an occurrence. It will be further observed that in case of the severance or disconnection of the power and the elevator at any moment or in any position the occupant may descend in safety and with certainty by operating the lever, which, in its connection with the ratchets on the shaft secured under the cage, effects the operation of the mechanism and lowers the elevator.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In combination, the side frames or timbers having guide-rails secured thereto, provided with a line of headed studs having anti-friction washers, the endless screws with beveled gear vertically arranged and disposed to engage with the line of studs, a horizontal shaft geared with the endless screws and journaled to the bottom of the cage, and carrying corded pulleys, and means for operating them, substantially as shown and described.

2. In combination with the side frames having guide-rails provided with a line of headed studs and carrying anti-friction collars, and vertically-arranged endless screws having their bearings in the frame under the cage and engaging with the line of studs, and formed with the beveled gear, and a horizontal shaft journaled beneath the bottom of the cage and provided with ratchet-wheels, a lever pivotally secured in the bottom of the cage to engage with the ratchets and operate the mechanism, substantially as and for the purposes set forth.

3. In combination with the cage of an elevator and the operative mechanism thereof, a shaft carrying ratchet-wheels secured thereto, and a lever pivotally secured to the bottom of the cage to engage with the ratchets and operate the mechanism, substantially as and for the purposes set forth.

In witness whereof I have hereunto subscribed my name in the presence of two attesting witnesses.

ORVILLE D. WOLCOTT.

Attest:
I. N. WHITTAM,
JAMES J. CHILD.