

(No Model.)

2 Sheets—Sheet 1.

R. C. SMITH.

MEANS FOR CONTROLLING THE VALVES OF ELEVATORS.

No. 334,907.

Patented Jan. 26, 1886.

Fig. 2.

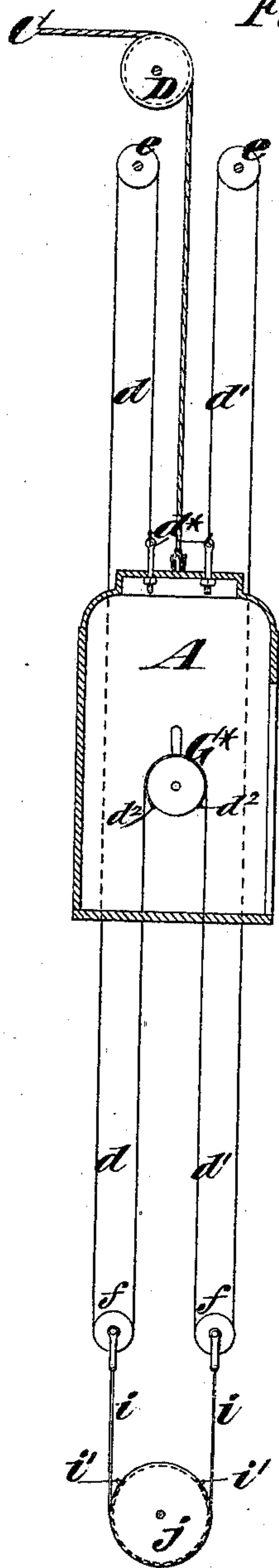
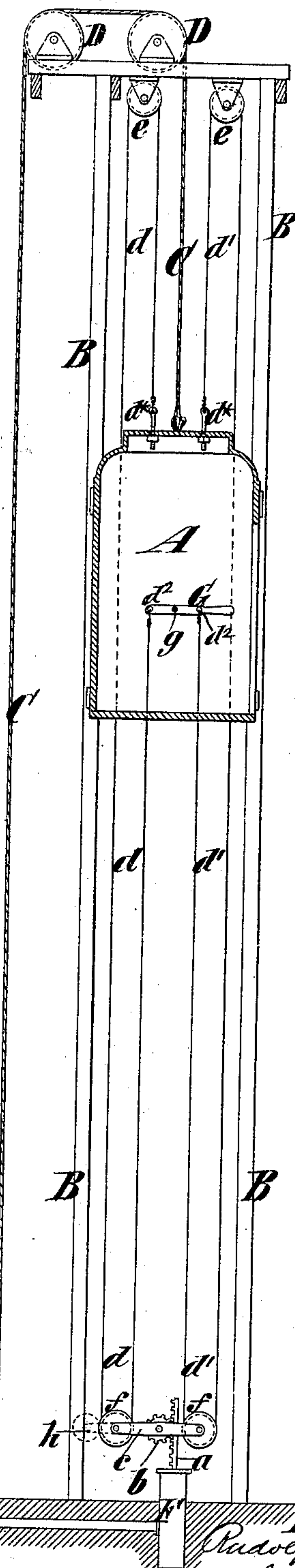


Fig. 1.



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O. Sundgren  
Emil Herter

Inventor:  
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By his Attorneys  
Brown & Hall

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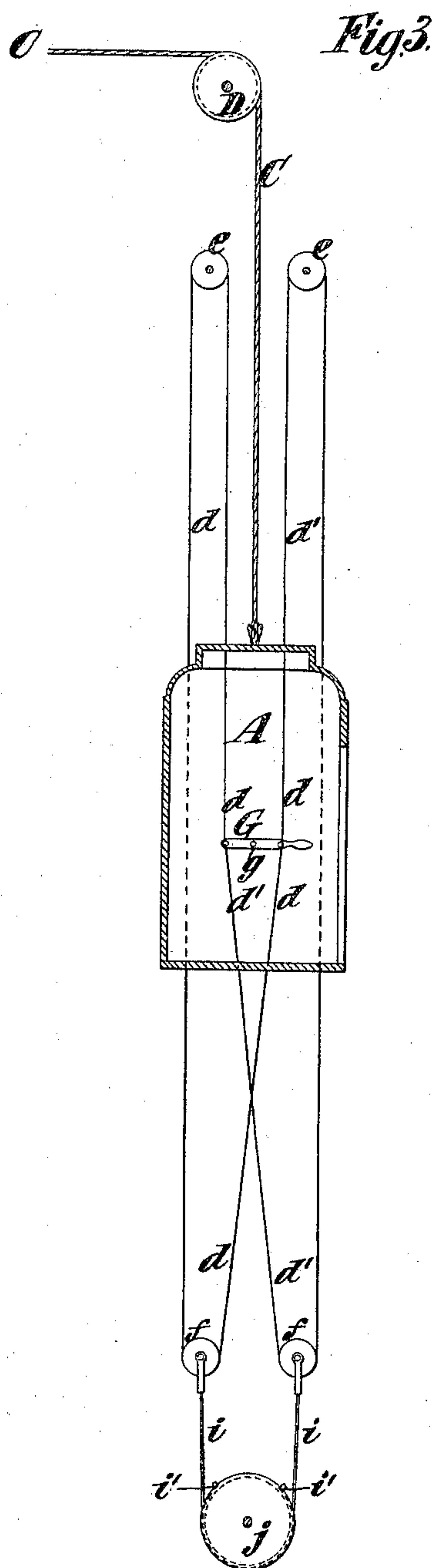
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Witnesses:

Olson Agren  
Emil Herter

Inventor:

Rudolph C. Smith  
By his Attys  
Brown & Hall



# UNITED STATES PATENT OFFICE.

RUDOLPH C. SMITH, OF YONKERS, NEW YORK.

## MEANS FOR CONTROLLING THE VALVES OF ELEVATORS.

SPECIFICATION forming part of Letters Patent No. 334,907, dated January 26, 1886.

Application filed December 15, 1885. Serial No. 185,716. (No model.)

*To all whom it may concern:*

Be it known that I, RUDOLPH C. SMITH, of Yonkers, in the county of Westchester and State of New York, have invented a new and  
5 useful Improvement in Means for Controlling the Valves of Elevators, of which the following is a specification.

The object of my invention is to provide a substitute for the ordinary hand-rope for operating the valve which controls the rising and falling movements of an elevator car or cab, whereby the attendant may, by the simple movement of a lever or handle, effect the desired result in a more accurate and easy manner than heretofore.

The invention consists in the combination, with an elevator car or cab, of a rope or cable passing around pulleys above and below the travel of the car or cab, and having its ends terminating at the car or cab, and a handle whereby the portion of rope or cable depending from the car or cab may be drawn in or shortened and paid out or lengthened, as may be desired, to operate the valve. One end of  
25 this rope or cable may be attached to the car or cab and the other end be attached to the handle on the car, or both ends of the rope or cable may be attached at opposite points to the handle. If a weight be employed to produce  
30 the movement of the rope or cable and the shifting handle in one direction, a single rope or cable only is necessary; but I prefer to employ two similar ropes or cables, attached at their one end to opposite points in the handle,  
35 so that one rope will be paid out as the other is drawn in or shortened.

In the accompanying drawings, Figure 1 is an elevation, partly in section, of an elevator and appurtenances embodying my invention; and Figs. 2 and 3 are sectional elevations illustrating slight modifications of my invention.

Similar letters of reference designate corresponding parts in all the figures.

Referring first to Fig. 1, A designates the car or cab, arranged to rise and fall along guides B, and suspended from cables C, which pass around overhead pulleys or sheaves, D, and are drawn in or paid out by a hydraulic-engine or other elevator-motor, E, to which my invention in nowise relates.

F designates a valve, whereby the flow of

water to and from the engine or motor E may be controlled, and which may be of any suitable character. As here represented it is provided with a rack-bar, *a*, with which engages a pinion, *b*. 55

*c* designates a lever fulcrumed concentrically with the pinion's axis, and so connected that the swinging of the lever will turn the pinion and shift the rack-bar *a* and valve. I have shown two similar cables, ropes, or other flexible connections, *d d'*, which pass around pulleys *e e* and *f f*, above and below the travel of the car or cab A. The lower pulleys, *f f*, are hung in opposite ends of the lever *c*, and are free to turn therein. Each cable *d d'* is nearly twice the height of the elevator-shaft in length, and at one end, *d\**, is attached to the car or cab, while its outer end extends upward into and terminates in the car or cab A. The two ends *d<sup>2</sup>* of the cables, which terminate in the car or cab, are attached to a lever or handle, G, at opposite sides of its fulcrum *g*, and it will be readily understood that by swinging the lever or handle G in one direction the cable *d* will be paid out or lengthened below the car, while the cable *d'* will be drawn in or shortened below the car. On the contrary, if the lever or handle G be moved in the reverse direction, the cable *d* will be drawn in or shortened, and the cable *d'* will be paid out or lengthened. When the cable *d* or *d'* is thus shortened or drawn into the car, the end of the lever *c*, which carries the pulley around which that cable passes, will be raised and thereby the pinion *b* will be turned and the valve F shifted. A single cable, *d*, might be employed to accomplish the result; but in that case there should be a weight, *h*, on the lever G, as shown by dotted lines, or at some equivalent point, in order to produce the return movement of the lever G. 85

The arrangement shown in Fig. 2 is like that above described in so far as the same letters are used to designate the parts, and operates upon exactly the same principle. In this example of my invention the two ends *d<sup>2</sup>* of the cables *d d'*, which terminate in the car or cab A, are carried in opposite directions around a drum or pulley, G\*, and attached thereto at the points *d<sup>2</sup>*. This drum or pulley constitutes a handle, which may be turned in 95 100



one or other direction to draw in or shorten one cable and pay out or lengthen the other cable. In this latter example of my invention the pulleys *f*, below the travel of the car or cab, are pivoted in stirrups, from which depend bands or other flexible connections *i*, passing in opposite directions round a pulley or drum, *j*, and attached thereto at *i'*. When either cable *d* or *d'* is drawn in or shortened, the connection *i* depending from the pulley around which that cable passes is drawn upon, and the pulley or drum *j* is thus turned in one or other direction, for the purpose of shifting a valve connected with it in any suitable manner. The shaft of the drum *j* may, for example, have upon it a pinion like that *b*, shown in Fig. 1, for operating the valve.

In the example of my invention shown in Fig. 3 the two ropes, *d d'* which pass over pulleys *e*, fixed above the cab A, and under pulleys *f f*, which are connected by the straps or connections *i* with the drum *j*, have both their ends terminating in the cab and attached at opposite points to the lever or handle G. When this lever or handle is shifted, each rope or cable is drawn into the cab from above and from below; but as the pulleys *e* are fixed, the only effect is to draw up one of the pulleys *f* and allow the other pulley *f* to fall.

I have in Fig. 1 shown the valve-shifting devices as connected with the main valve, which controls the admission of water to and its exhaust from the hydraulic apparatus E; but, if desired, these shifting devices may be employed to shift an auxiliary valve which controls the operation of an independent engine, by which the main valve is operated,

as shown in Letters Patent No. 314,720, granted March 31, 1885, to George H. Reynolds, and in Letters Patent No. 306,097, granted October 7, 1884, to Otis and Schmidt.

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

1. The combination, with an elevator car or cab, of a rope or cable passing around pulleys above and below the travel of the car or cab, and having its ends terminating at the car or cab, and a handle whereby the portion of a rope or cable depending from the car or cab may be drawn in or shortened and paid out or lengthened, substantially as herein described.

2. The combination, with an elevator car or cab, of a rope or cable passing around pulleys above and below the travel of the car or cab, and having one of its ends attached to the car or cab and its other end terminating therein and attached to a handle, whereby it may be drawn in or shortened and paid out or lengthened, substantially as herein described.

3. The combination, with an elevator car or cab, of two ropes or cables passing around pulleys above and below the travel of the car or cab, attached at their one end to the car or cab and having their other ends terminating in the car or cab and attached at opposite points to an operating-handle, substantially as herein described.

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Witnesses:

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FREDK. HAYNES.