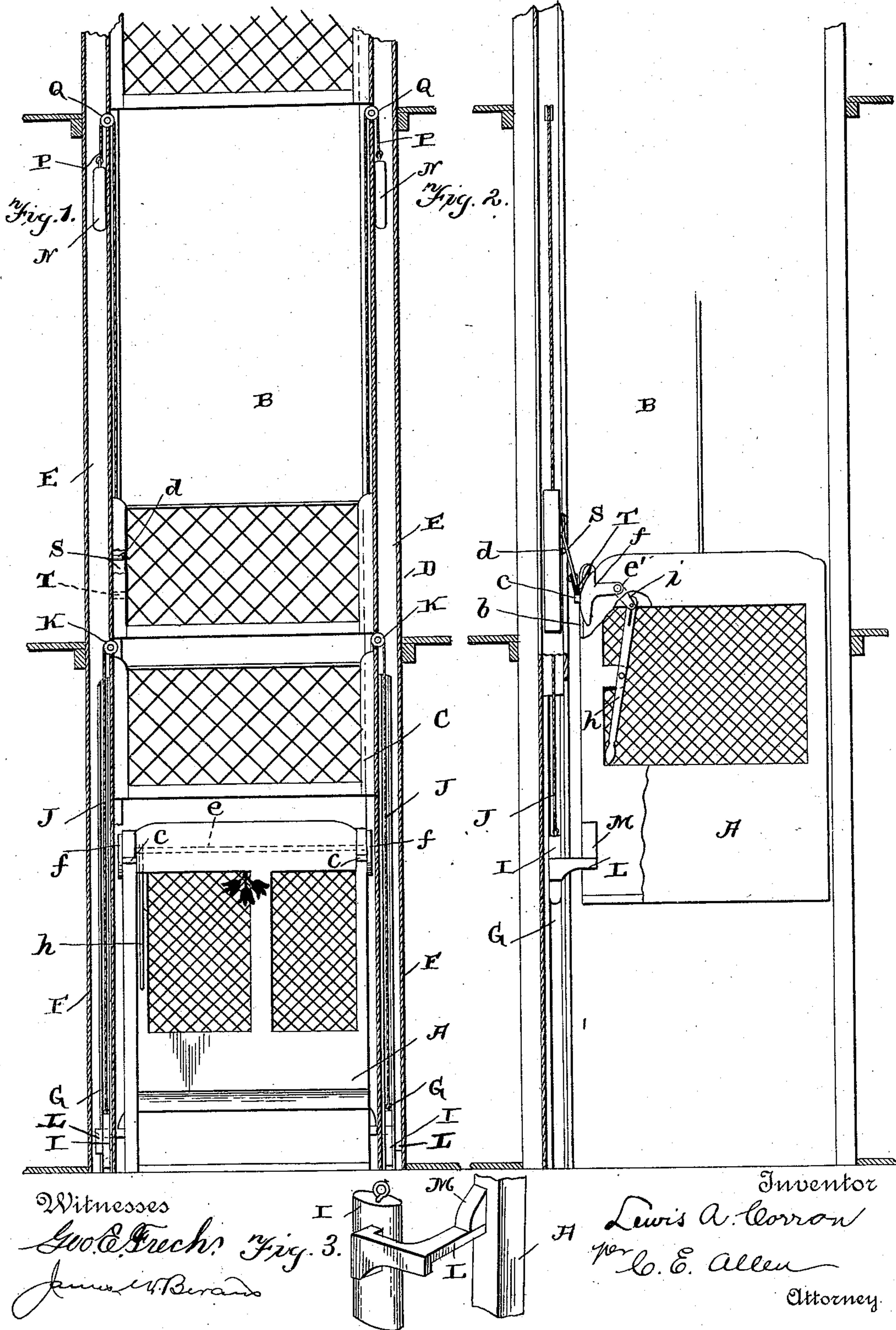


L. A. CORRON.
ELEVATOR.

Patented Feb. 19, 1895.



UNITED STATES PATENT OFFICE.

LEWIS A. CORRON, OF WINOOSKI, VERMONT.

ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 534,317, dated February 19, 1895.

Application filed October 9, 1894. Serial No. 525,419. (No model.)

To all whom it may concern:

Be it known that I, LEWIS A. CORRON, a citizen of the United States, residing at Winooski, in the county of Chittenden and State of Vermont, have invented certain new and useful Improvements in Elevators; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to certain improvements in gates for elevator shafts; and consists in the particular construction and arrangement of parts which will be fully described hereinafter and particularly pointed out in the claims.

The object of my invention is to provide means whereby the lower gate is held raised or open while the car is down, and the upper gate automatically raised as the car ascends; and to provide the car with means adapted to be operated by the elevator boy for passing any gate in ascending and for tripping the gates after they are raised to permit them to drop and close the opening to the shaft.

In the accompanying drawings, Figure 1 is a vertical section taken through the front standards or beams of the elevator shaft. Fig. 2 is a side elevation partly in section to show the slide-way for the counter-balancing weight of the gate. Fig. 3 is a detached perspective view of the lower combined weight and operating stop or shoulder for the lower gate.

In Fig. 1, the elevator car A is shown at the bottom of the shaft B, and the lower gate C raised to permit free access into the said car. I here show the gate as extending entirely across the shaft, which I prefer, as it permits uninterrupted access to any part of the car from the floor of the building as will be readily understood, but at the same time the gate may be made narrower than the width of the shaft if preferred, without departing from the spirit of my invention.

The front or inner vertical beams D of the shaft are so shaped as to provide vertical ways E which are inclosed by the casing F, and placed at the lower end of the said beam with- in this way, are the metallic or other suitable guide-ways G. These guide-ways consist of parallel strips having oval longitudinal

grooves in their inner faces which receive the correspondingly shaped edges of a weight I. These weight I are connected with the upper ends of the gates by means of cords J which pass over sheaves K suitably journaled in the beams. Extending from the counter-weights I around to the inner side of the shaft are the arms L which form stops or shoulders for engaging projections M extending laterally from the front side of the car A. These weights are made so that they will nearly counter-balance the weight of the gates, thus making the vertical movement of the latter easy, while at the same time the said gates will of themselves descend when left free to do so.

When the car is in the position shown in Fig. 1 the projections extending laterally therefrom are in engagement with the arms of the weights, thus holding the lower gate up and permitting free access into the car. When however the car ascends the gate is automatically lowered and closes the opening to the shaft as will be readily understood, and remains in this position until the car again descends and raises the same through the medium of the said arms engaging the said projections of the car. This arrangement of the lower door is not applicable to the upper doors. The counter-weights N are connected through the medium of fibrous ropes P passing over sheaves Q and attached to the upper end of the gate. These weights are likewise of such a size as to nearly counter-balance the gate so that it will move upward easily, but will permit the gate to descend of its own weight when left free to do so. Extending inward from the upper gate, of which there may be any desired number according to the number of floors in the building, are the springs S having preferably at their lower ends the cushions or buffers T, which engage the curved upper ends *a* of the elevator car. These curved upper ends are preferably covered with metallic plates *b* having near their lower ends the outwardly extending shoulders or projections *c*. As the car ascends these downwardly and inwardly extending springs engage the curved portions of the upper end of the car, and slide down the base of the metallic plate and engage the said shoulders *c* at which point they rest until the gate is elevated. The upper gates are held in

their proper positions preferably by means of pins or studs *d* extending inwardly from the beams, and which pass between the inner sides of the said springs and the gate as shown.

5 In this manner the springs form a yielding raising means between the upper gates and the car so that there is not a sudden jar, and also provide a resting means when the gate descends.

10 Extending across the car adjacent its upper inner ends, is a shaft *e* carrying at each end the curved trippers *f*. These trippers when the shaft is partially turned in one direction extend outward beyond the edges of the shoulders adjacent thereto, so that as the car ascends the lower ends of the springs of the upper gates engage the curved surfaces of these trippers and the springs are thus prevented from engaging the projections and
15 the car moves upward without lifting the gates. So also after the gate is raised, it is tripped by means of these trippers through the medium of a lever *h* intermediately pivoted to the inner side of the car. The upper end of this lever *h* is loosely connected with the lower end of an arm *i* extending downward from and secured rigidly to the said shaft. This lever is placed in a position to be conveniently operated by the elevator
20 boy for the purpose of preventing the raising of any gate as the car moves upward, and also for the purpose of tripping the gate after it has been elevated and permitting it to drop while the car continues to ascend to the
25 next floor.

30 The object of having the guide-ways at the lower ends of the beams with grooves oval shaped in cross section is to reduce the friction upon the counter-weight within the said
35 groove as they move within the guide-ways.

40 When the car is descending and it is desired to lift any of the gates at any one of the upper floors, it is only necessary to allow the car to move down below that floor suffi-

ciently to have the downwardly and inwardly 45 extending arms of the door of that floor engage the projection upon the car and then raise the car which will then open the door as will be readily understood.

While I here show gates at only one side of 50 the shaft, it will be readily understood that they may be placed at several sides if desired, the operation at each side being the same as that here shown and described.

Having thus fully described my invention, 55 what I claim as new, and desire to secure by Letters Patent, is—

1. The combination with an elevator shaft of an upper gate, inwardly extending yielding projections from said gate, the car having 60 projections to engage the yielding projections of the upper gate, and a means carried by the car for tripping said yielding projections of the upper gate, substantially as specified.

2. The combination with an elevator shaft, 65 of a gate having inwardly extending projections, a car having shoulders or projections adapted to engage the gate projections, a shaft extending across the said car, curved trippers secured to the shaft and adapted to 70 be thrown outside of the said car projections, and a lever for operating the shaft, substantially as specified.

3. The combination with an elevator shaft, 75 of a gate, downwardly and inwardly extending springs, pins extending from the shaft adapted to engage the spring, the elevator car having curved upper ends, and projections below the curved upper ends adapted to engage the said downwardly and inwardly ex- 80 tending springs of the gates, substantially as set forth.

In testimony whereof I do affix my signature in presence of two witnesses.

LEWIS A. CORRON.

Witnesses:

GILBERT A. DOW,
WILLIAM E. WELLER.