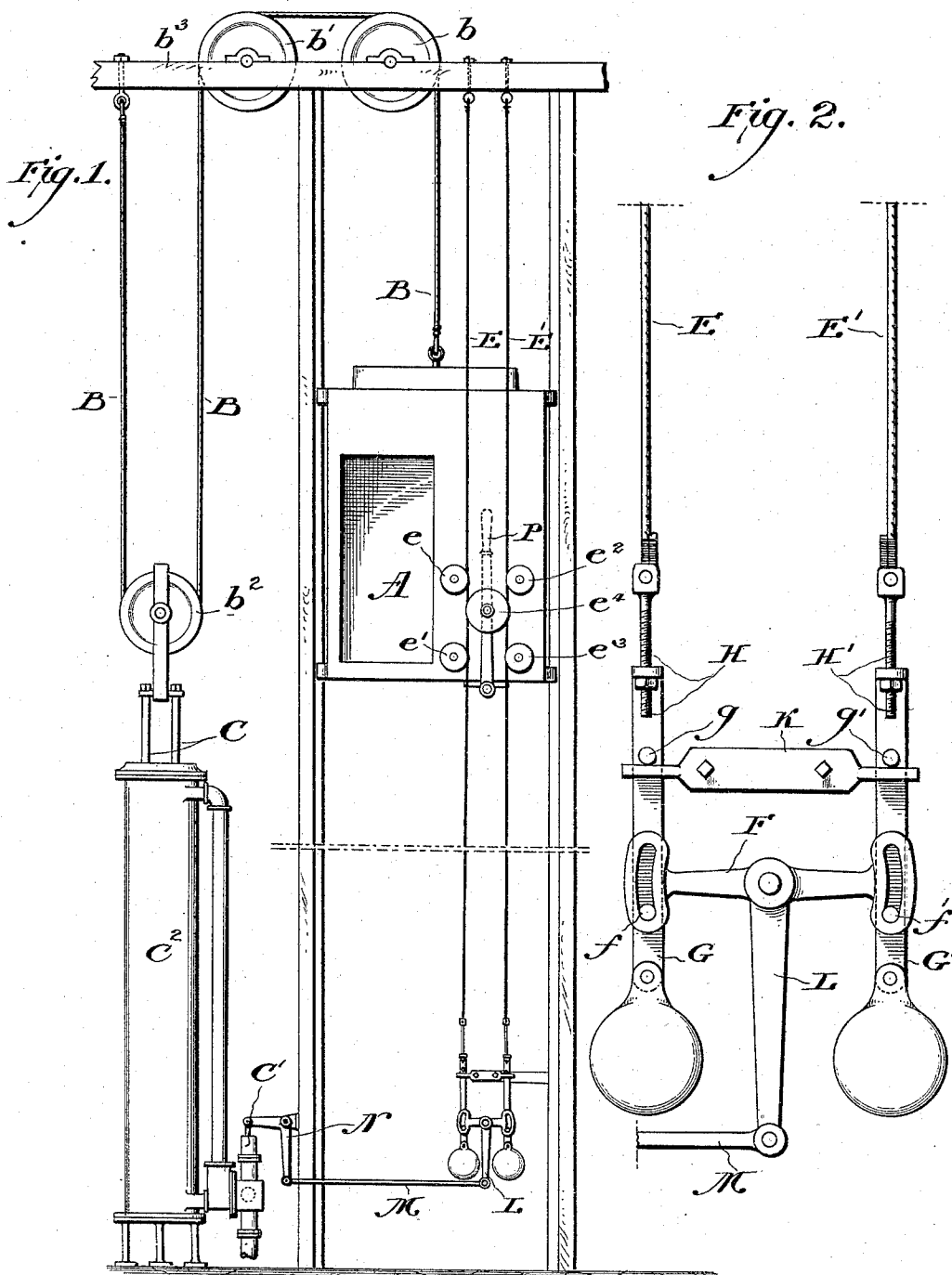


F. E. HERDMAN.
ELEVATOR.

No. 487,267.

Patented Dec. 6, 1892.



WITNESSES:
David S. Williams,
Frank A. Bussan

INVENTOR:
Frank E. Herdman
by his atty
J. H. Harding

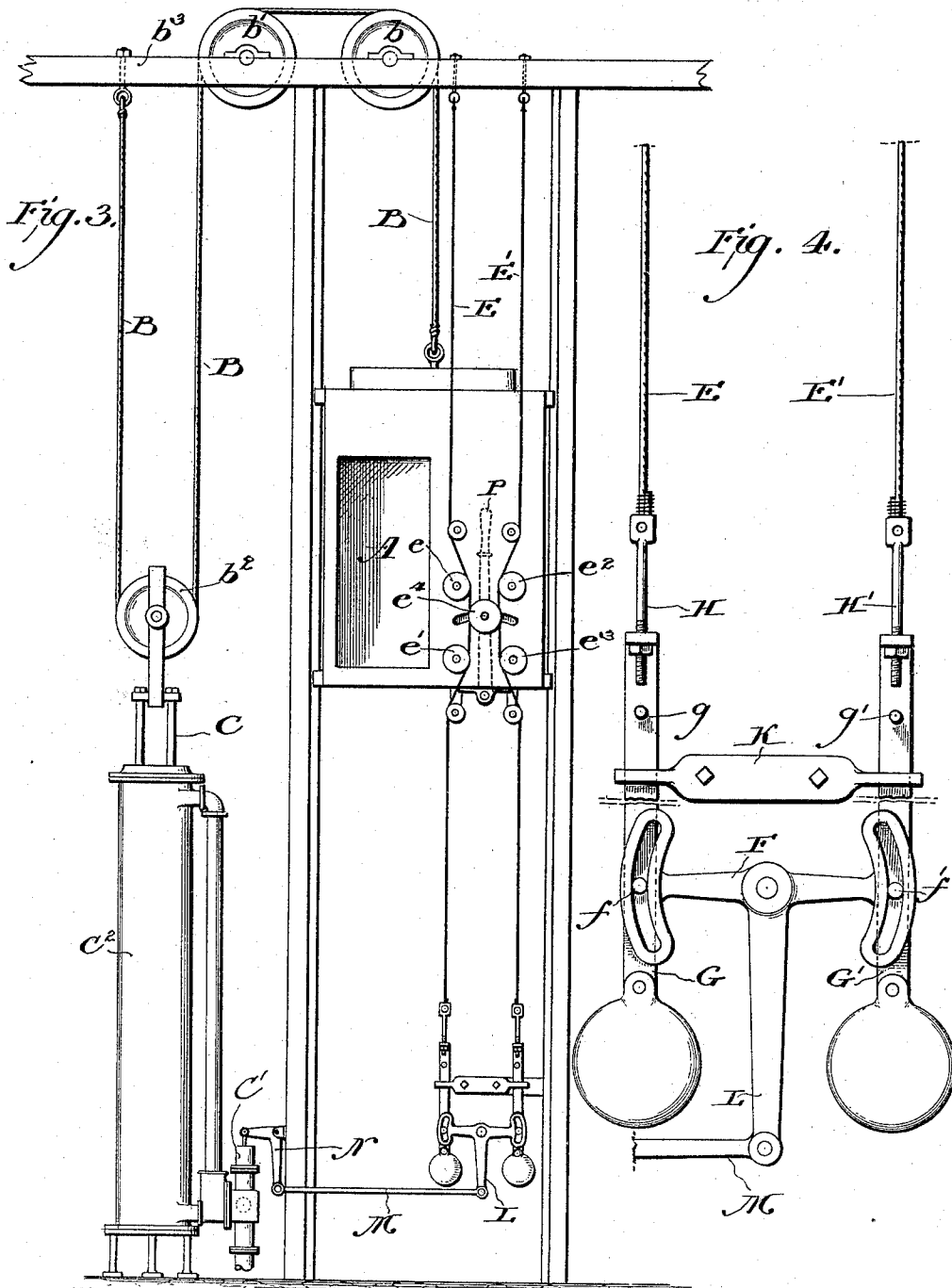
(No Model.)

2 Sheets—Sheet 2.

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UNITED STATES PATENT OFFICE.

FRANK E. HERDMAN, OF INDIANAPOLIS, INDIANA.

ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 487,267, dated December 6, 1892.

Application filed March 8, 1892. Serial No. 424,139. (No model.)

To all whom it may concern:

Be it known that I, FRANK E. HERDMAN, a citizen of the United States, residing at Indianapolis, county of Marion, and State of Indiana, have invented a new and useful Improvement in Elevators, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which form a part of this specification.

My invention has for its object an improvement in the mechanism for controlling the operating mechanism from the car by means of operating-cables, and the purpose of the invention is that in case either of the operating-cables break the operating mechanism will stop, the operator, however, being at liberty to operate the elevator in an opposite but not in the same direction in which the rope broken works it. Thus the operator can move back to a floor and let out passengers, thereby creating no annoyance.

In the drawings, Figure 1 is a side elevation of elevator, elevating apparatus and mechanism, and mechanism for controlling the operating mechanism from the car. Fig. 2 is an enlarged elevation of portion of mechanism. Fig. 3 is a view the same as Fig. 1, with slight modifications. Fig. 4 is an enlarged elevation of portion of mechanism the same as Fig. 2, with slight modifications.

A is the elevator; B, the elevating-cable, which passes over the sheaves $b\ b'$ and around the traveling sheave b^2 , and is connected to the arm b^3 . The traveling sheave b^2 is connected to the piston C.

C' is the valve of the hydraulic cylinder C².

E E' are the operating-cables, connected at their upper ends to the beam b^3 . These ropes pass around the car, and in the figures are shown touching pulleys $e\ e'$ and $e^2\ e^3$, respectively.

F is a slotted lever. $f\ f'$ are pins in the slot of said lever, said pins $f\ f'$ being connected to the weighted bars G G', respectively, the other ends of these bars being attached to the cables E and E' by means of long threaded rods H H', so that the operating-cables can be adjusted at any time. Through the bars

G G', at a point clear of the slotted lever F, are placed the pins $g\ g'$, and beneath them is placed the fixed bar K, provided with slots through which the rods G G' pass.

L is a link connected to the lever F and connecting-rod M, the rod M being connected to the bell-crank lever N, which in turn is connected to the valve-operating mechanism.

In the case shown in Figs. 1 and 2, where the pins $f\ f'$ are at the bottom of the slot, when the operating-valve is closed the bar K is so located that when the weights are holding the cable so that the pin rests in the bottom of the slot the pins $g\ g'$ are just clear of the bar. In that case, if the lever P (which is connected to the pulley e^4) be thrown in one direction or the other, thereby shortening one or the other of the cables and raising the slotted lever F on that side as soon as the lever P is brought back to the center, the weight attached to the said cable straightens it and brings the lever F to the center. If the cable should break during the operating of the elevator, the weight would be free to fall, and as it fell would tend to draw down one side of the lever F; but the pin g limits this fall to the point where the lever F is brought to a central position, and thus the result is simply that the elevator is stopped, the operator still being free to operate the other cable and run the elevator in the direction in which that rope controls it.

In the case, Figs. 3 and 4, where the pins $f\ f'$ are in the center of the slots of the lever F when the car is at rest, the bar K has sufficient clearance between it and the pins $g\ g'$, so that in case of the cable breaking the distance of fall of the weight would be sufficient to bring the pin in contact with the bottom of the slot and draw the lever to its central position. By means of this mechanism, if either of the operating-cables break the operating mechanism is stopped and the operator can operate the other cable so as to return the car to a landing.

In place of weights or bars G G' springs may be used, as the operation of springs is in this case equivalent to that of weights.

Having now fully described my invention, what I claim as new, and desire to protect by Letters Patent, is—

In combination with operating-cables, a
5 slotted lever, bars provided with pins resting in said slotted lever, said cables being connected to said bars, pins, as *g g'*, upon said bars above said slotted lever, a bar, as *K*, the ends of said bar being in line with said pins,

operating mechanism, and intermediate connection between said slotted lever and operating mechanism.

In testimony of which invention I have hereunto set my hand.

FRANK E. HERDMAN.

Witnesses:

W. L. ROBINSON,
G. E. SCHMITULÄND.