

2 Sheets—Sheet 1.

ELEVATOR SAFETY GATE.

Patented Aug. 12, 1884.

Fig. 1.

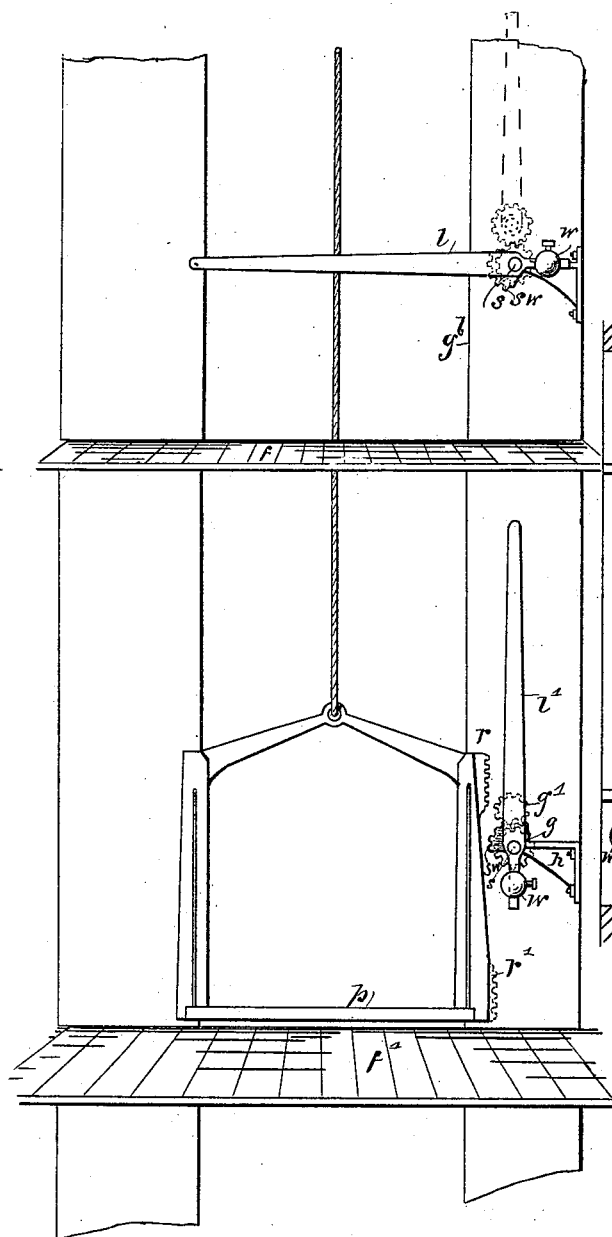
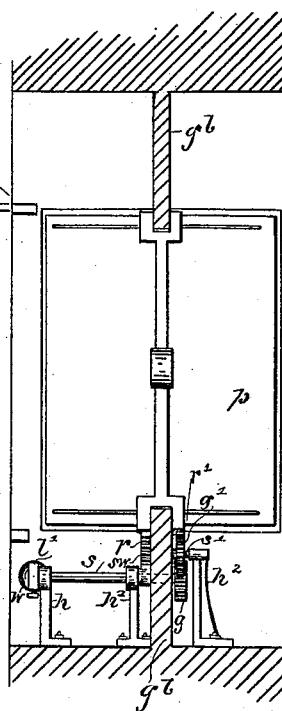


Fig. 2.



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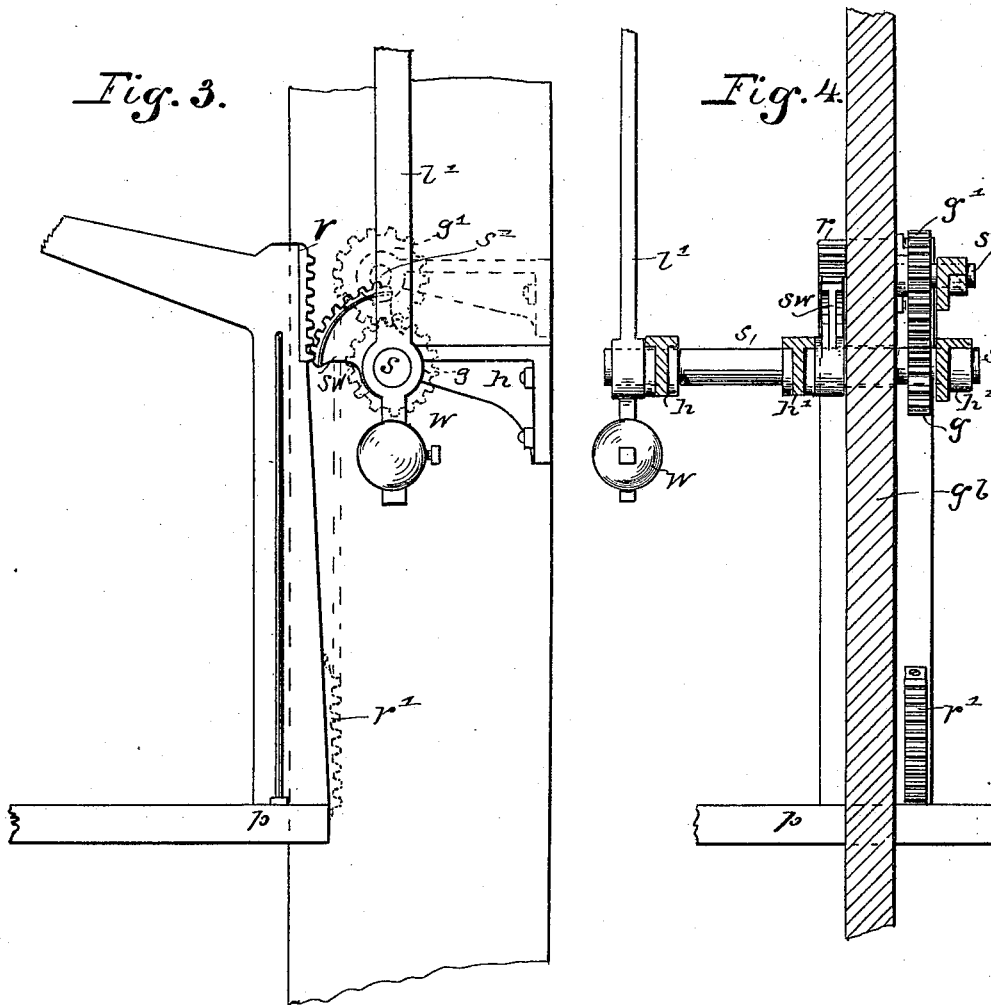
(No Model.)

2 Sheets—Sheet 2.

A. L. HECK.
ELEVATOR SAFETY GATE.

No. 303,388.

Patented Aug. 12, 1884.



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UNITED STATES PATENT OFFICE.

ADAM L. HECK, OF INDIANAPOLIS, ASSIGNOR OF ONE-HALF TO CHARLES F. REICHARDT, OF MARION COUNTY, INDIANA.

ELEVATOR SAFETY-GATE.

SPECIFICATION forming part of Letters Patent No. 303,388, dated August 12, 1884.

Application filed April 11, 1884. (No model.)

To all whom it may concern:

Be it known that I, ADAM L. HECK, of the city of Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Automatic Elevator Safety-Gates, of which the following is a specification.

The object of my invention is to provide an automatic safety-gate for elevators, which object I accomplish by means of the mechanical device described in this specification, and illustrated in the drawings filed herewith and made a part hereof, and in which similar letters of reference relate to similar parts of my invention.

Figure 1 is a front view of an ordinary elevator with my automatic safety-gate attached; and Fig. 2 is a top view of Fig. 1, showing the mechanical device for opening and closing the gates. Fig. 3 represents a portion of the frame of the elevator-cage upon which the rack r , in full lines, and the rack r' , in dotted lines, are shown to engage, respectively, the segmental wheel s w , mounted on shaft s , which supports the safety-gate l , provided with balance-weight W , and the dotted cog-wheel g' on the counter-shaft s' engaging with the dotted cog-wheel g , mounted on shaft s , supported by hangers h , attached to the wall of the elevator-chute. Fig. 4 represents a portion of the elevator-cage, showing the relative position of each of the racks r and r' on the frame of the cage, and the segmental wheel s w , gear-wheel g' on counter-shaft s' , and its engagement with gear-wheel g on shaft s , which, supported by hangers h , h' , and h'' , operates the safety-gate l , as hereinafter described.

In Fig. 1, p is the cage of my elevator; g^b , the guide-rail. l and l' are safety-gates, provided with balance-weights W . These safety-gates are swung on the outer ends of shafts s , journaled into hangers h and h' , firmly attached to the inner side of the walls of the chute.

s w is a segmental cog-wheel rigidly attached to the shaft s , which actuates and supports the gate l . r and r' are racks firmly attached at the front and back of the frame of the cage, as seen on the drawings, Fig. 2.

s' is a counter-shaft, upon which is rigidly mounted the gear-wheel g' . This shaft is journaled into hangers h'' , and provided with cog-wheel g , to engage with cog-wheel g , rigidly mounted on shaft s , for opening the gate

when the cage is descending and closing the gate when ascending, as hereinafter described.

f f' represent the first and second floors of a building, with the elevator in position to be loaded and the safety-gate l' open.

The operation of my device is as follows: As the elevator-cage passes from the first floor upward, the rack r' at the lower end of the frame of the cage engages with the cog-wheel g' , mounted on shaft s' , causing this wheel to rotate upward; and as this wheel is constantly in engagement with cog-wheel g , mounted on shaft s , this shaft is caused to rotate downward, carrying with it the safety-gate l , thus closing it automatically. As the elevator-cage nears the second landing, f , the rack r engages with the segmental cog-wheel s w , mounted on shaft s , causing the shaft s to rotate upward, and thus automatically open this gate l . Should the elevator-cage pass on upward, the rack r' engages with the cog-wheel g' , mounted on the counter-shaft s' , which is engaged with cog-wheel g , on shaft s , closing the gate l , in the manner described for closing the gate l' above mentioned.

It is plainly apparent from the above that the operation of my device will be reversed. As the elevator, in descending, nears the second landing, f , from above, the rack r' engages the cog-wheel g' , causing this wheel to revolve downward, which, being engaged with cog-wheel g on shaft s , opens the gate, and upon the elevator-cage leaving this landing on its downward course the rack r engages the segmental cog-wheel s w , thus closing the gate, which operation will be again repeated at the first landing.

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

The combination of a cage or platform of an elevator, provided with racks r r' , with gears s w and g' , meshing, respectively, with said racks, and a counterbalanced gate, whereby the latter is automatically opened and closed as the cage approaches and leaves a landing, substantially as shown and described.

In witness whereof I have hereunto set my hand at Indianapolis, Indiana, this 29th day of March, A. D. 1884.

In presence of— ADAM L. HECK.

JAMES SULGROVE,

JOHN MILLER.