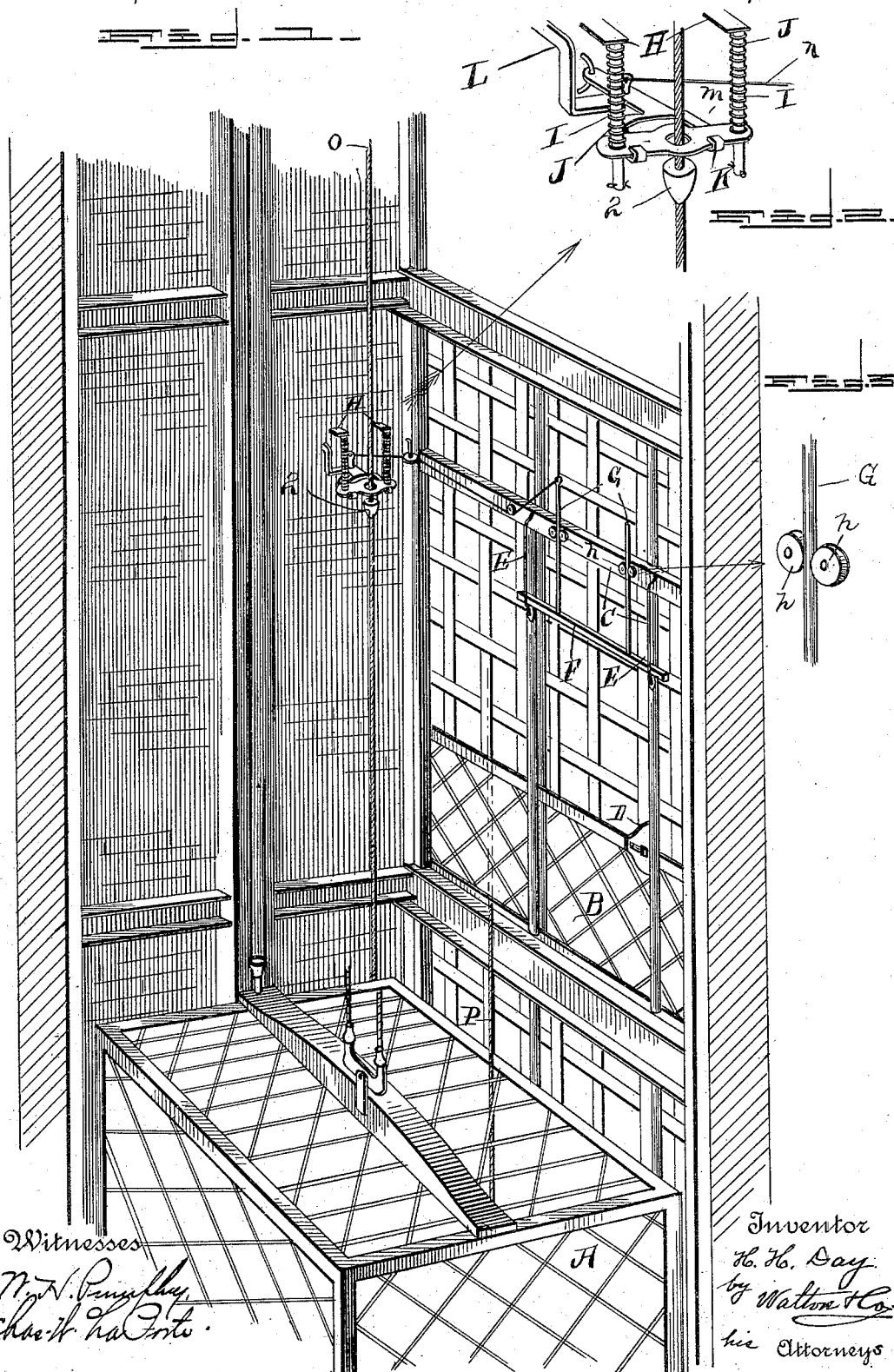


(No Model.)

H. H. DAY.
SAFETY ELEVATOR DEVICE.

No. 493,760.

Patented Mar. 21, 1893.



Witnesses
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UNITED STATES PATENT OFFICE.

HENRY HALE DAY, OF NEWTON, MASSACHUSETTS.

SAFETY ELEVATOR DEVICE.

SPECIFICATION forming part of Letters Patent No. 493,760, dated March 21, 1893.

Application filed November 4, 1892. Serial No. 451,004. (No model.)

To all whom it may concern:

Be it known that I, HENRY HALE DAY, a citizen of the United States, residing at Newton, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Safety Elevator Devices; 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 safety attachments for elevators for automatically and instantaneously stopping the ascent of an elevator car as it approaches the floors through which the elevator shaft extends whenever any portion of a person, or article in the door way of any floor or the door way of the car tends to obstruct the passage of the car by contact with either the car or the door way of the floor, as the case may be.

The object of my invention is to provide a safety device for elevator cars which is simple in construction, inexpensive, and which may be readily attached to any elevator.

A further object is to provide means whereby it will render it impossible for a passenger to be caught between the elevator and door way, in case the car has not stopped or has suddenly started to ascend before the person has gotten safely on or off the car.

Finally the object of my invention is to provide a safety elevator device of simple construction, of a few parts, and less apt to become inoperative or to get out of repair than safety devices heretofore known.

To these ends the invention consists in the construction and arrangement of parts hereinafter fully described and particularly pointed out in the claim.

In the accompanying drawings, corresponding letters and figures indicate like parts throughout the several views.

Figure 1 is a perspective view, taken from the rear end of the elevator shaft, parts being broken away, to show the elevator car ascending, a door way with the safety device attached, to the door way, and to the wall of the elevator shaft to instantaneously stop the elevator car in its ascent in case of an accident. Fig. 2 is a perspective view of a spring device attached to the wall of the elevator

shaft, forming part of the safety elevator device for operating a cable to stop the car in case of accident. Fig. 3 is a detail of a guide rod and rollers which are mounted on the frame work inside and over a door way to the elevator shaft.

A refers to the elevator car.

B is a door way to the elevator shaft. 60

C refers to frame work in the door way of a floor between which and the grating, an elevator door D slides to allow means for ingress and egress to and from the elevator car.

E are vertical guide rods mounted on frame C on each side of the door way near its top to permit the vertical play of a frame F mounted therein as shown. 65

G are vertical guide rods securely fastened at their lower ends to frame F and passing between guide rollers H suitably mounted on frame C to guide frame F in its vertical movement. 70

H is a frame work suitably secured to one of the walls of the elevator shaft and provided with depending rods I which are surrounded by spring wire coils J securely fastened at their upper extremities to frame H, and at their lower ends to a bar K with apertures near its end through which rods I extend. 75

L is a support of suitable form fastened to the wall of the elevator shaft directly in rear of frame H to hold in a horizontal position a rest M with two arms, as shown. This rest M which is securely fastened to the wall of the shaft by means of a staple, as shown in Fig. 2, holds plate K in an elevated position thus compressing springs J when the rest is in a perpendicular position with respect to the wall and held in that position by resting on its support L. The front ends of rest M may be bent over to loosely clasp plate K or be otherwise attached thereto if found convenient. 80

N is a wire or cord attached at one end to rest M and extends through suitable guide ways on the walls of the elevator shaft and frame C, and is held taut and is securely fastened at its other end to the upper extremity of one of the guide rods G. 85

O is a cable extending from the valve controlling mechanism of the motive power at one side of the elevator shaft, through aperture in plate K to the upper end of the shaft, 100

and has secured thereon under and in close proximity to plate K in its elevated position, a stop 2. Cable O operates the controlling valve mechanism to stop the elevator, when
5 pulled slightly downward, independently of cable P which is used for that purpose by the elevator operator.

The operation of the safety device is as follows: The frame F and spring device attached
10 to the wall of the elevator shaft are adjusted in the position shown in Figs. 1 and 2, the spring J being compressed and held in that position by rest M which in turn is held in a perpendicular position with respect to the
15 wall by support L. In case a person or any article should be caught between the door way of any floor and the car in its ascent, the person or obstacle would first come in contact with frame F which would raise the same
20 in its guide rods E, and by means of cord or wire N attached to one of the guide rods G would pull rest M off its support L thus permitting the tensions of springs J to assert themselves, force plate K downward thereby
25 causing the same to contact with stop 2 on cable O pulling the cable downward and stopping the elevator car before or by the time frame F had been forced to the upper part of the guide ways formed by guide rods E. The
30 obstacle to the progress of the car can then be removed, the spring device and frame F be adjusted in the position shown for operation, in case of a second accident. Frames F, guide rods G, rollers and cords may be used
35 to connect this spring device with the door ways of the different floors of the shaft, and more than one spring device may be attached

to the wall of the elevator shaft in long shafts, or where found to be convenient.

I do not claim in this application the safety 40 device for instantaneously stopping an elevator in its descent in case of accident, the same being claimed in my application, Serial No. 450,682 filed November 1, 1892.

It is evident that many changes may be 45 made in the arrangement and construction of parts without departing from the spirit of my invention.

What I claim, and desire to secure by Letters Patent, is— 50

In an elevator, the combination, with an elevator car and an operating cable provided with a stop, of a movable frame mounted on a side of the elevator shaft adjacent to the door-way, a spring-pressed device mounted 55 on one wall of the shaft and adapted to engage the cable-stop, means for normally supporting said spring device against the tension of the spring and out of engagement with the stop, and a connection between the movable 60 frame and the spring-pressed device whereby, when in the ascent of the elevator car an obstruction meets the movable frame, the spring device will be released from the supporting means and thereby engage the cable 65 stop to arrest the car, substantially as described and set forth.

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

HENRY HALE DAY.

Witnesses:

S. F. S. MORTON,
JULIET DAY.