

A. Betteley,
Elevator.

N^o 26,469.

Patented Dec. 20, 1859.

Fig 1

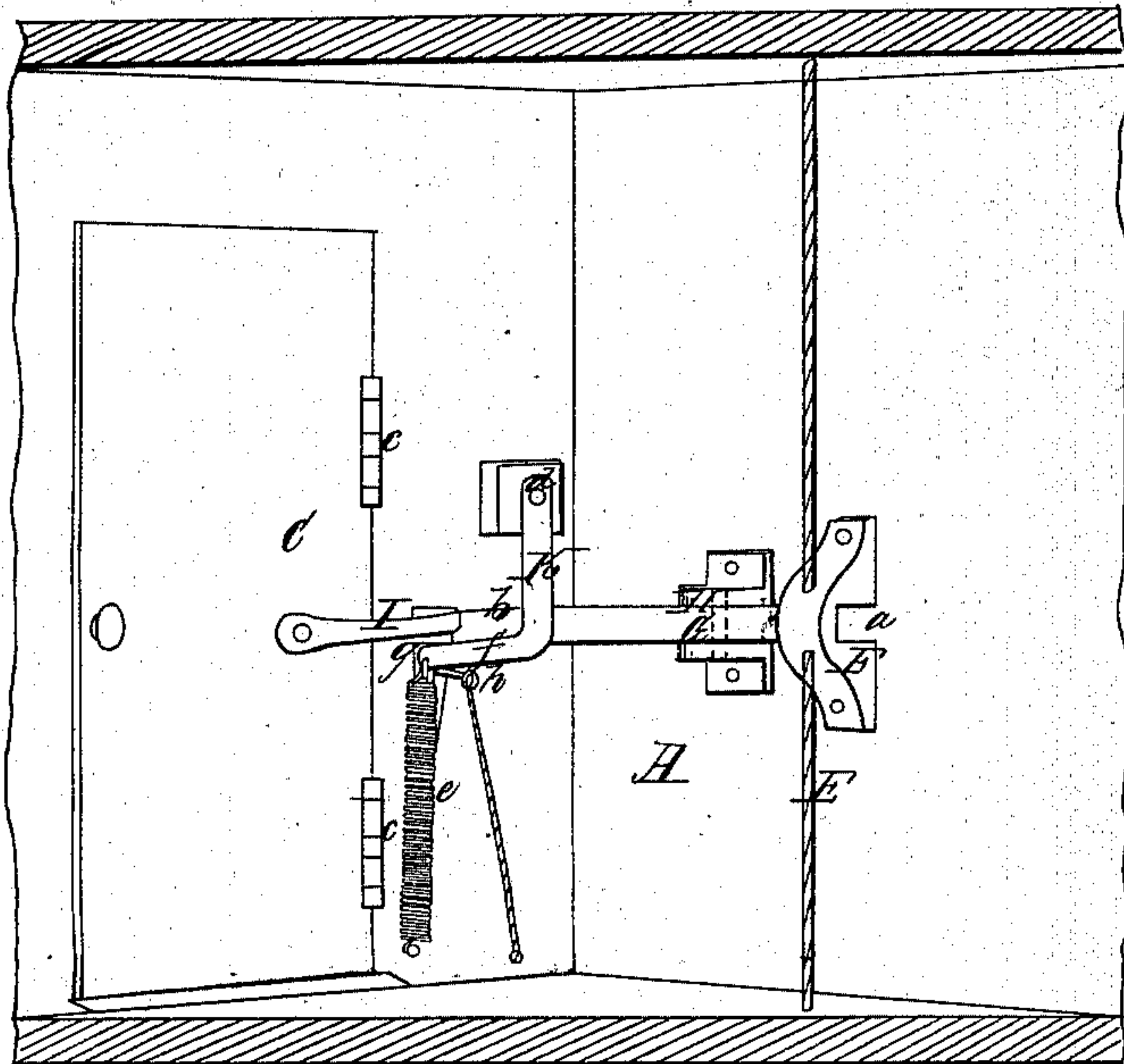
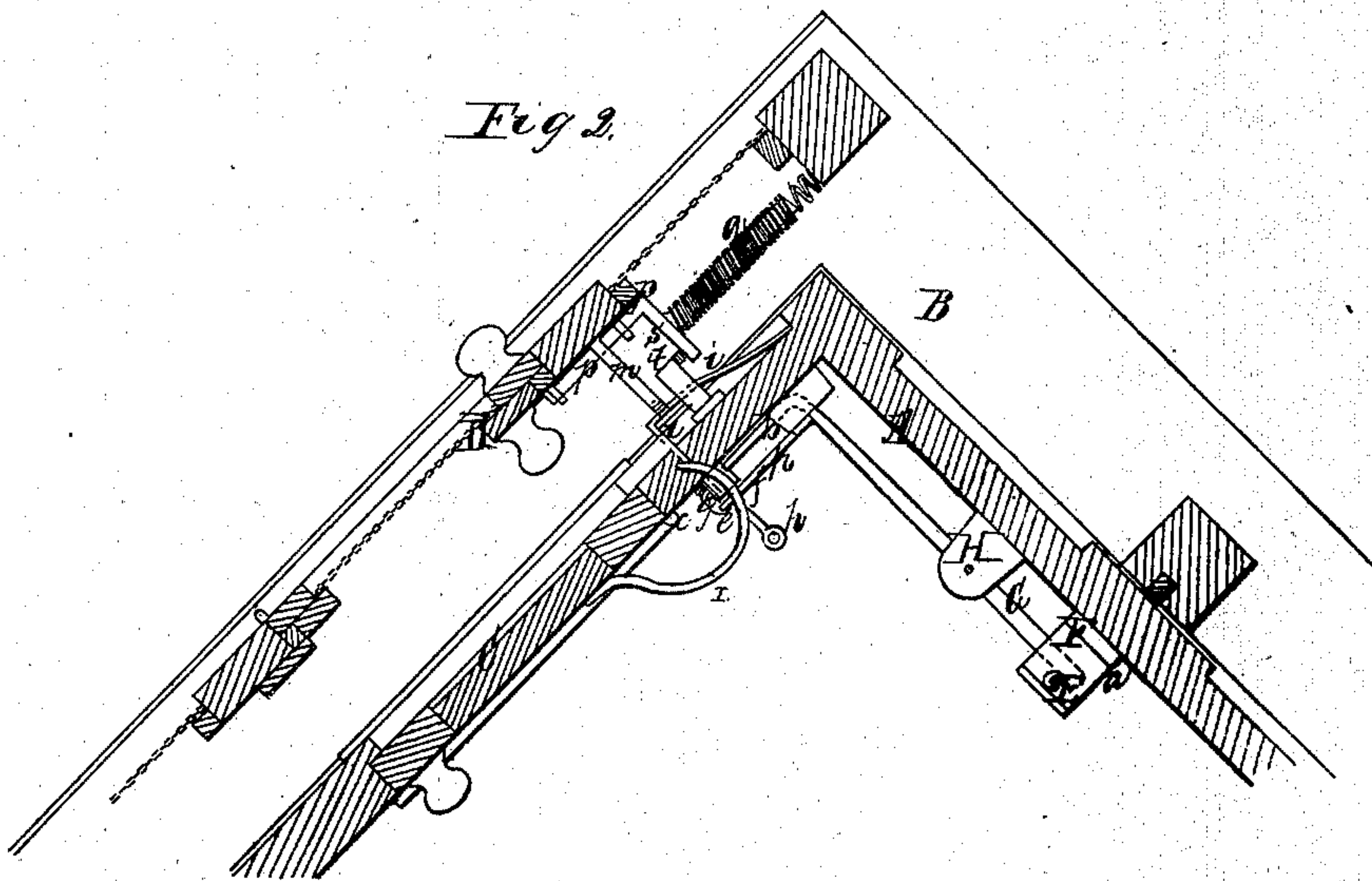


Fig 2.



Witnesses
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ALBERT BETTELEY, OF BOSTON, MASSACHUSETTS.

HOISTING-MACHINE.

Specification of Letters Patent No. 26,469, dated December 20, 1859.

To all whom it may concern:

Be it known that I, ALBERT BETTELEY, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Elevators to be Used in Hotels and other Places for Raising and Lowering Persons, Goods, &c.; and I do hereby declare that the following, taken in connection with the accompanying drawings, which form a part of this specification, is a description thereof so full and exact as to enable those skilled in the art to practice my invention.

The object I have had in view, in constructing this elevator has been the prevention of accidents more or less liable to occur in the use more particularly of hotel elevators, which accidents may and are likely to happen from various causes, such as opening, or leaving open, the door of a car, while the car is rising or descending, or from the car not stopping when desirable at the right position to allow passengers to leave the car, or to enter the same, or from persons at other stations starting the car as they are apt to do when it is stationed at some landing to allow of the egress or ingress of passengers. Very great care and vigilance are necessary in the common method of operating these elevators, to prevent accidents arising from these causes, and I have therefore applied several automatic contrivances to be operated by the ascent or descent of the car, which add very much to the safety of this method of rising and lowering, diminishing the trouble and care otherwise necessary in their use.

The invention consists, first, in an arrangement of mechanism, whereby the opening of the door leading from the car, shall cause the immediate stopping of the car, providing of course that the door is opened, while the car is ascending or descending; second, in a method of causing the car to stop automatically at each or either landing, in order that passengers may enter or leave the car, the car being also prevented from being moved or started by persons at other stations, whenever it has been stopped by opening of its door or at one of the landings.

The invention is fully illustrated in the accompanying drawings, wherein—

Figure 1, denotes a view of the interior of the car, showing the side thereof on which the door is situated, and one of the sides adjacent to said door. Fig. 2, is a horizontal

section of such portions of the car, and the adjacent sides to the hatchway showing the mechanism appertaining to my invention in top view.

In the said drawings wherever seen, A, denotes the car, or transporting chamber; B, the hatchway, through which the car is guided in its ascent and descent in the usual manner; C, the door leading from the car; D, an opposite door, leading from one of the several landings, each of which is to be similarly provided with a door to be locked and unlocked by a passing car.

E, denotes the shipper rope or chain, which passes through one side of the car, and is connected at its opposite ends to the shipping apparatus which operates the shipper and brake. I have only shown the shipper cord in its position in the car, the operation of the shipper on the belts and brake being fully shown in the patent granted to me May 31st, 1859, and in another shipping mechanism for which I am now about to apply for Letters Patent. The rope E, in its passage through the car, passes through a guide block F, through or into which block an aperture *a*, extends. The rope where running through the aperture *a*, passes between the block, and one end of a long lever G, which turns on a fulcrum at H, and is bent around at one end as seen at *b*, in Fig. 2.

The door C, of the car turns upon hinges *c*, and to its hinged side I attach a cam or projection I. When the door is closed, one side of this cam comes into or nearly into contact with the adjacent end *b*, of the lever G, and under these circumstances, the shipper cord or rope, is free to run through the guide block, F, but the cam is so formed, that when the door is opened, or begins to open, the adjacent end of the lever is forced back, while its opposite end is forced against and made to grasp the shipper rope or pinch it between the lever and the block, creating a strain upon the shipper rope, sufficient to operate the shipper bar, and to throw the belt from the fast pulley and thereby arrest the motion of the car. The cam is so made as to keep the lever grasping the rope, whenever and however much the door may be opened, the car being thereby stopped until when (at such time as it may be again closed), the conductor or other person, can throw back the belt by moving the shipper rope E, in one direction or the other and thereby start the car. Thus the opening of the door, may be

used as a means of stopping the car when desirable, although my invention particularly relates to stopping the car from the accidental or careless opening of it.

5 K, is a spring lever hung and turning upon a fulcrum *d*, and bent around and having a spring *e*, fastened to its lower arm *f* as seen in Fig. 1. The arm *f*, rests and is supported upon a shelf *g*, being generally kept there-
 0 upon by a supporting pin *p*. The upper arm of the lever K impinges against the outer arm of the lever G, which it operates as before described to pinch upon the rope.

A spring *i* is attached to the outer side of
 5 the car, as seen in Fig. 2, one end thereof being bent around and extending through the side of the car, so as to come into or nearly into contact with the side of the lever K. A stationary cam projection *m*, is placed oppo-
 0 site thereto on the side of the hatchway, the cam being so placed that as the car passes up or down by it, the spring *i*, shall strike against, and be forced in by it, thereby pushing the lever K, from its shelf, which (if its
 5 pin *h* is removed) being drawn down by its springs, actuates the lever G.

Now I so place the cams *m*, and spring *i*, that they shall come in contact just as the door D of each hatchway or landing, comes
 0 opposite to the door C, of the car, or in position to allow, when the said doors are opened, free passage through them. When the car in its ascent or descent, comes to a landing, and the spring and cam into contact, the
 5 spring as before stated will push the lever K, from its seat, thereby causing it, (providing the pin *h*, has been removed) to actuate the lever G, and cause the car to be stopped, just as it is stopped at other times by the opening
 10 of the car door as before described. Before the car is again started, the conductor or some person therein, lifts the arm *f* of the spring lever upon its seat, *g*, and so as to release the shipper rope from pressure, when
 15 the car will be free to be set in motion by

pulling the shipper rope as will be readily understood.

Thus it will be seen that the car can readily be made to stop at each landing, the pin *h*, for this purpose being kept removed, 50 and the lever K placed on its shelf, after leaving each landing. Also that by keeping the pin in its place and the spring lever upon its shelf, any desired number of land-
 ings may be and will be passed without stop- 55 ping, and by removing the pin before coming to any landing where it is wished to stop, the car will be arrested without further effort or attention. And it will be further
 seen that while thus stationary at a landing, 60 no person above or below can start the car, as the pressure on its shipper cord remains until some person in the car removes it, when by pulling the shipper rope, the car is again
 set in motion. 65

I would remark that though I have described thus particularly the several mechanical devices for carrying out the purposes above set forth that I by no means intend to confine myself to such devices, but to
 70 vary them as circumstances or experience may dictate or require, using any method for arriving at the same results, which shall be substantially the same, or which do not
 depart from the spirit of my invention. 75

I claim therefore:

1. Bringing the car to a stop whenever (while in motion) its door may be opened, by causing the shipper rope to be pinched or held substantially as above described. 80
2. The arrangement substantially as above specified for causing the car to be stopped at proper times or places, said arrangement consisting of cam *m*, spring *i*, levers K, G, operating together and upon the shipper 85 cord.

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Witnesses:

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