(No Model.)

H. L. RENNE.

SAFETY CAR DOOR.

No. 377,330. Patented Jan. 31, 1888.

Fig. 1.

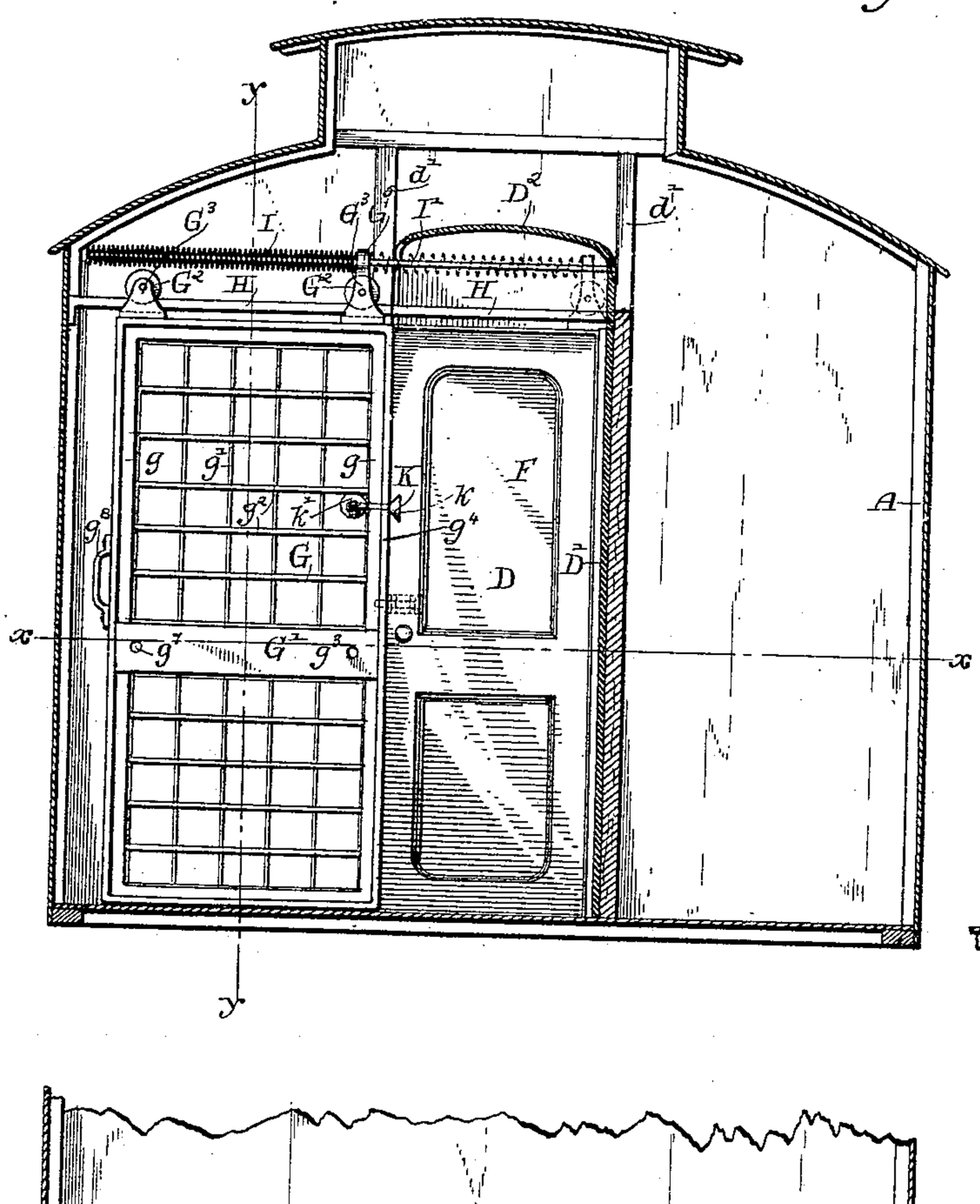


Fig. 3.

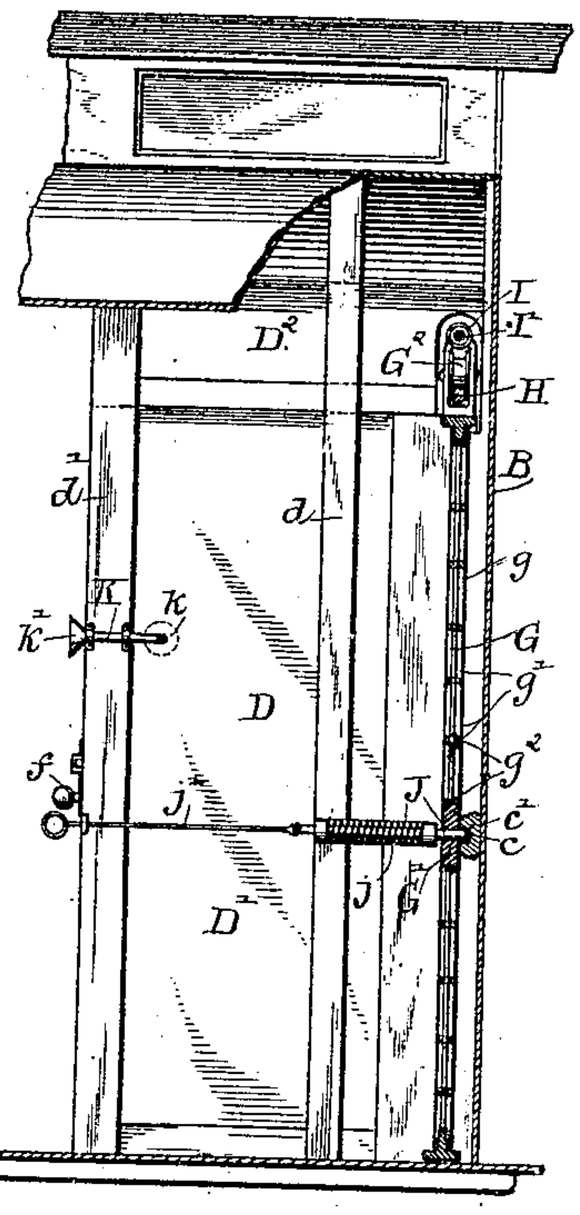
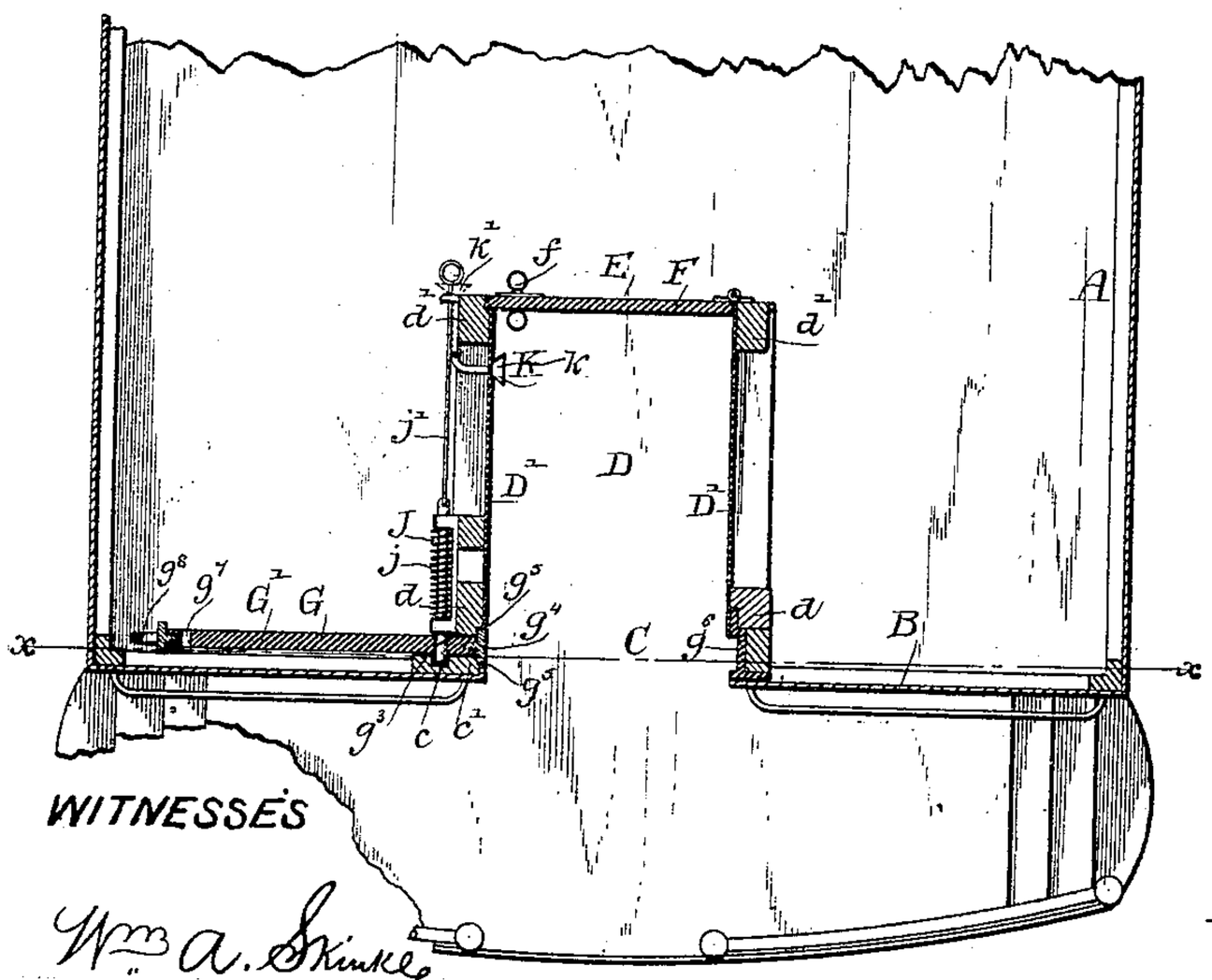


Fig. 2.



WITNESSES

Wm A. Skinkle

Geo W. Young.

INVENTOR

Horace L. Renne.

by.- Dayton & Poole.

Attorneys.

UNITED STATES PATENT OFFICE.

HORACE L. RENNE, OF HAMMOND, INDIANA, ASSIGNOR OF ONE-HALF TO WILLIAM H. VERRILL, OF SAME PLACE.

SAFETY CAR-DOOR.

SPECIFICATION forming part of Letters Patent No. 377,330, dated January 31, 1888.

Application filed October 18, 1886. Serial No. 216,502. (No model.)

To all whom it may concern:

Be it known that I, HORACE L. RENNE, of Hammond, in the county of Lake and State of Indiana, have invented certain new and useful Improvements in Safety Car-Doors; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to a safety-door for express, mail, or baggage cars intended to provide means for preventing the access of unauthorized persons to the car and for preventing the escape of a suspicious person or one attempting to enter the car for the purpose of robbery.

The invention consists in the matters hereinafter described, and pointed out in the appended claims.

The device embodying my invention consists, essentially, in a compartment or short passage arranged inside of and adjacent to the end door of the car, said passage being provided at its inner end with a door which is provided with a lock to prevent the entrance of unauthorized persons, and which takes the place of the ordinary end door of the car, and, together with an upwardly-extending fixed portion above the door-frame, forms an end wall for the passage or compartment. At the outer end of said passage or compartment the opening in the end of the car at which the door is usually placed is provided with a sliding door, preferably of metal, said sliding door being provided with a spring, weight, or other means operating to throw it into its closed position. A latch or bolt is provided to hold the said sliding door normally open, said latch or bolt being so constructed that it may be readily moved to release the door and allow the latter to close when desired. In connection with a sliding door thus made means are provided whereby communication may be had between the person in the car and one standing in the compartment or passage—such, for instance, as a speaking-tube—whereby the person inside the car can ascertain the identity of a person asking admission before opening the inner door.

One desirable construction in a device embodying my invention is illustrated in the accompanying drawings, in which—

Figure 1 is a sectional elevation, taken upon line *x x* of Fig. 2, of one end of the car containing my invention. Fig. 2 is a sectional plan view of the same, taken upon line *x x* of Fig. 1. Fig. 3 is a vertical section taken upon line *y y* of Fig. 1.

As illustrated in the said drawings, A is the car-body, B is the end wall thereof, and C is the opening or doorway usually present at the end of a car for passing from the platform to the interior of the car-body.

D is a compartment or passage located inside of the car adjacent to the doorway C, and consisting, as herein shown, of side walls, D′, and a top, D^2, these parts being preferably formed of sheet metal and supported by attachment to vertical posts or standards *d d d′ d′*, extending from the floor to the roof of the car.

E is an opening or doorway formed at the inner end of the passage or compartment D, and provided with a door, F, which, as shown, and in connection with the upwardly-extending fixed portion F′ above the door-frame, constitutes the end wall of the passage D. This door is preferably arranged to open toward the inside of the car, and is desirably made of metal, as is also the door casing or frame and the parts connecting it with the side walls, D′, and top D^2 of the passage D. The door F is provided with the usual lock, *f*, so that it may commonly be kept closed and secured.

G is a sliding metal door constructed to close the doorway C when desired. In the particular construction of the said door G herein illustrated it is made in the form of an open iron grating, with a marginal frame-piece, *g*, and suitable horizontal and vertical cross-bars, *g′* g^2.

G′ is a horizontal metal bar forming one of the cross-bars of the door, and provided with a notch or recess, g^3, for engagement with the locking device, by which the door is held open. The said door is desirably sustained by means of rollers G^2 G^2, mounted in forked bars or stirrups G^3 at the top of the door, said rollers being constructed to rest upon a horizontal track, H, supported upon the car and extending from the side wall thereof past the door-

way C, somewhat above the top of the latter. The door G is preferably arranged close to the end wall, B, of the car and slides through a vertical slot or passage formed between the standard *d* and the said end wall, B, the front or outer margin of the door being preferably provided with a flat vertical bar, g^4, secured to the frame-bar *g*, and constructed to fit at its edges in rabbets g^5 g^5, formed in the adjacent parts of the end wall, B, and the side wall, D′, of the passage. At the side of the passage opposite to that through which the opening or slot is formed, and through which the door passes, is provided a vertical groove or recess, g^6, adapted to receive the forward edge of the door when the latter is closed and to thereby hold the door securely from lateral movement at such time.

I have herein shown as a means for closing the door a spiral spring, I, placed around a stationary rod, I′, and resting at one end against the side wall of the car and at its opposite end against an arm or bracket, G^5, at the top of the door G, said spring being constructed to act by its expansion to hold the door in its closed position. The said door G is intended usually to remain open, and to hold it in this position I provide a bolt or catch, J, herein shown as attached to one of the posts *d*, and constructed to engage the aperture or recess g^3 in the bar G′ of the door when the latter is open. The said bolt J is desirably provided with a spring, *j*, tending to hold it in engagement with the door, and an actuating-rod, *j*′, is preferably extended from the said bolt to the posts *d*′, where it is provided with a handle by which it may be conveniently grasped and the bolt operated by a person standing near the inner door, F. For locking the door in its closed position, the bolt J may be conveniently arranged to engage the door in such manner as to prevent its being pushed backwardly. A hole, g^7, is herein shown as formed in the bar G′ in proper position to engage the bolt at the time the door is tightly closed. To cause the automatic locking of the door as soon as it is closed, the bar G′, engaged by the end of the bolt, is preferably made flush or smooth from end to end, so that when the bolt J is drawn out of the recess *g*, and then immediately released and allowed to rest against the said bar, the said bolt will slip into the hole g^7 of the door as soon as the latter reaches its closed position. To more strongly hold the bolt, the latter is preferably arranged to engage a recess, *c*, formed in the casing *c*′, attached to the end wall, B, so that the bolt is held at both ends at the time it is engaged with the door.

K is a short speaking-tube extending through the partition of the side wall, D′, dividing the interior of the car from the passage D, said speaking-tube being provided with a mouth-piece, *k*, in position convenient for the use of a person standing within the passage D, near the inner door, F, thereof. A mouth-piece, *k*, is provided at the opposite end of the said speaking-tube in a position convenient to the attendant within the car. By the use of the said speaking-tube K the person within the car can hold communication with the person seeking admission, and will thus be able to determine before the door is open as to the identity of the person within the passage and the propriety of opening the door. If in communicating with the person within the passage unsatisfactory answers are obtained, or there is any other ground for suspicion as to the object of such person in seeking admission, the attendant can actuate the bolt and thereby release the outer or spring door, G, and thus securely imprison or confine the suspected person within the passage D.

In the use of this device upon railroads it may be convenient to provide the employés of the road entitled to access to the car with a pass-word, so that the attendant within the car can immediately determine upon the propriety of opening the inner door when a person asks to enter.

In carrying out my invention it may in some cases be thought desirable to make the passage D and the door F of wood; but I prefer that these parts should be made of metal, so that a person may be safely retained therein without danger of injury to the persons within the car from the use of fire-arms, and without liability of the person thus imprisoned making his escape by breaking through the walls or the door.

It is entirely obvious that in a passage or compartment made of metal in the manner described, and provided with an iron door, an intending robber, even though armed, may be safely kept and held until a point is reached where he can be safely secured. The door G may of course be made solid or without apertures; but a grating is preferred, for the reason that a door thus made is lighter and cheaper to construct, while at the same time it allows an inspection of the interior of the passage D when the said door is closed.

The outer doorway, C, may be provided, in addition to the sliding door G, with a common door; but this will not be usually desirable or necessary.

The main advantage of the invention may be attained when the door G is so arranged that it may be controlled from the interior of the car, and a construction embracing said door, whether it is actuated by a spring or otherwise, or when said door is without special actuating devices and is moved by hand, is herein broadly claimed as my invention.

I claim as my invention—

1. The combination, with the car provided with the normally-open doorway or opening C at its end, of the compartment or passage formed within the same and adjacent to said doorway by means of side, end, and top walls, a door at the inner end of said passage opening into the car, and a sliding door at the outer end of said passage for closing the door-

way C, a spring applied to throw said door into its closed position, and means, substantially as described, holding said door in its opened position, controlled from the interior of the car.

2. The combination of the end wall of the car provided with a doorway, C, and a compartment or passage, D, adjacent to said doorway, said compartment or passage being provided with a door at its inner end, of a sliding door, G, at its outer end, a spring applied to throw said door into its closed position, a latch or bolt engaging said sliding door for holding the latter open against the action of the spring, and connections extending from said latch to the interior of the car, substantially as described.

3. The combination, with a car provided with a doorway or opening, C, in its end wall, of a compartment or passage, D, formed within the car by said door, and end walls adjacent to said doorway or opening, said passage having a door at its inner end, a sliding door, G, for closing the said doorway or opening and provided with locking-apertures g^3 g^7, and a spring latch or bolt, J, constructed to enter one or other of the apertures in the said sliding door when the latter is opened and when it is closed, substantially as described.

4. The combination, with a car provided with a doorway or opening in its end wall, of a compartment or passage formed within the car adjacent to said doorway or opening and having a doorway at its inner end, said doorway forming its inner end wall and leading into the car, a sliding door for closing the doorway or opening, and a spring-bolt extending from the inner side of the end wall or passage and arranged for controlling the sliding door both when opened and when closed, substantially as described.

In testimony that I claim the foregoing as my invention I affix my signature in presence of two witnesses.

HORACE L. RENNE.

Witnesses:

C. CLARENCE POOLE,

WM. H. VERRILL.