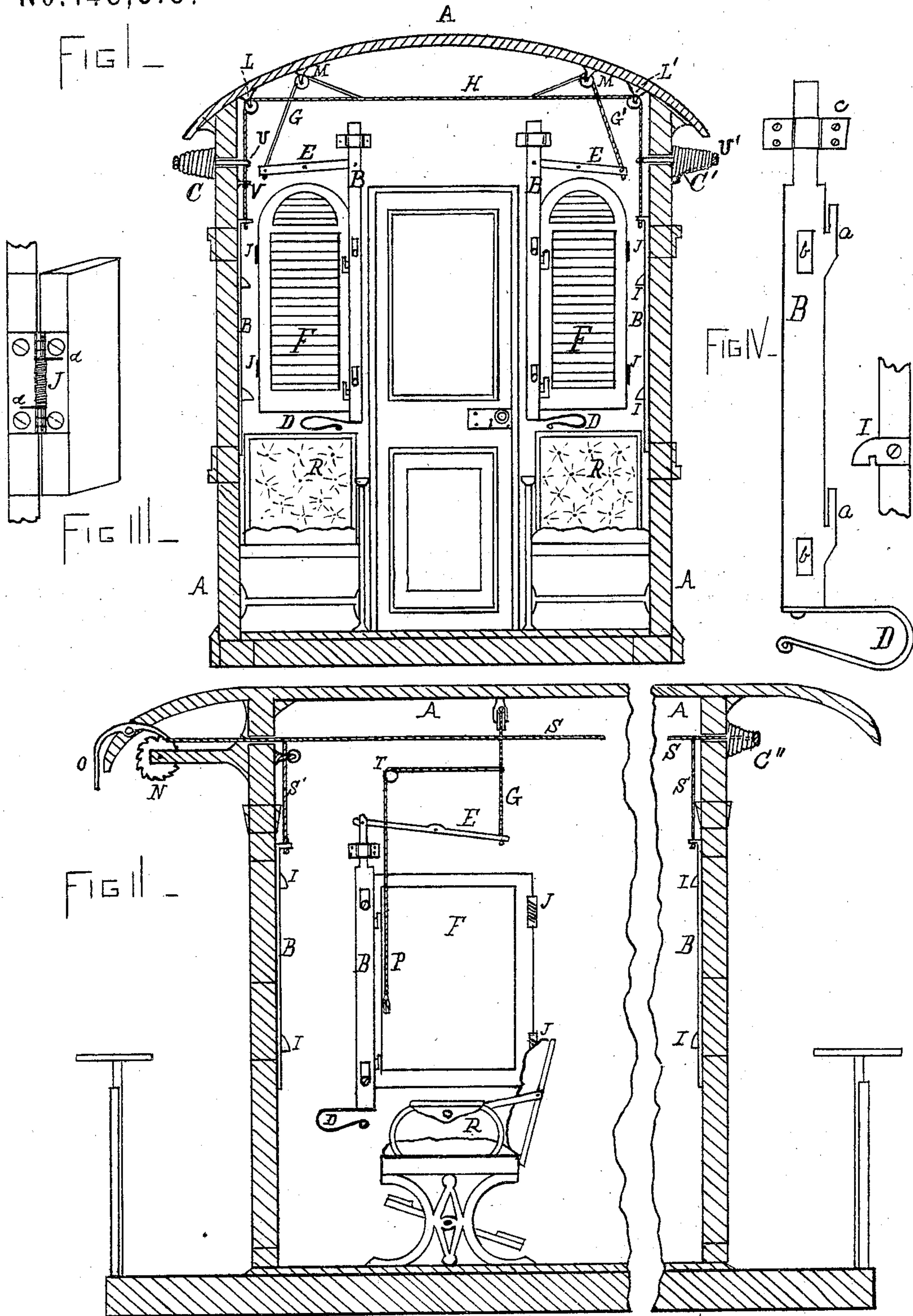


H. B. MYER.
Safety-Cars.

No. 148,318.

Patented March 10, 1874.



WITNESSES -

J. Bonsall Taylor.
E. J. Tracy.

INVENTOR -

Henry B. Myer

UNITED STATES PATENT OFFICE.

HENRY B. MYER, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN SAFETY-CARS.

Specification forming part of Letters Patent No. **148,318**, dated March 10, 1874; application filed December 6, 1873.

To all whom it may concern:

Be it known that I, HENRY B. MYER, of the city and county of Philadelphia, in the State of Pennsylvania, have invented a new and useful Safety-Car; and I do hereby declare the following to be a full, clear, and precise description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawing, which exhibits the nature of my invention, and forms part of this specification, and of which—

Figure 1 is a vertical cross-section of an ordinary railway-car provided with my safety appliances, and displaying the interior of the end of the car. Fig. 2 is a vertical longitudinal section of the same, displaying my safety appliances attached to the side of the car. Fig. 3 is a slightly-perspective view of my spring window-hinge, and Fig. 4 is a side view of my sliding window-frame fastener with its attachments.

Similar letters of reference indicate corresponding parts in all the figures.

My invention has for its object the construction of a safety railroad-car—a car of such design that, in case of a collision, fire, overturning, or accident of any description, egress can be had from it by means of automatically-opening windows on sides, ends, and top of the car.

Under the existing system, scarcely a week passes devoid of railroad accidents wherein the lives of passengers are lost from their inability to escape from the débris of a car telescoped, crushed, or overturned in a collision or accident of a kindred nature. Now, by my invention, I purpose to increase greatly the chances of escape by constructing the cars with large hinged window-frames, arranged, in connection with suitable mechanism, so as to fly open in case of collision or overturning of the car, and thereby afford means of egress for the inmates.

The detailed construction of my arrangement is as follows:

A is the main frame-work of the car. (Shown in both figures in section.) F are the hinged window-frames, the same being large frame-works, holding the ordinary glass and screens, hinged with spring-hinges J (represented in Fig. 3) to the car. These hinges contain a spi-

ral or other adaptable spring, coiled on the connecting-rod of the hasps of the hinge, whose ends *d d* are left projecting, one pressing on each side of the hinge, and pressing constantly apart by the expansive action of the spiral. Now, it will be readily understood that, unless forcibly retained closed, the window-frames would tend to remain open, and when, after closing, they are released, they will, by the spring's action, once more fly open. Now, in normal use, it is, of course, desirable to keep these frame-works shut, and I have made use of a special device (shown in Fig. 4) to effect that purpose, and this device I call a "sliding fastener." It consists of an elongated piece of metal, B, sliding through a bearing, *c*, attached to the side of the car, and held firmly in place by screw-studs, which pass through slots *b* cut in it. It is provided with little projecting shoulder-pieces *a a*, which catch in clutch-pieces I on the window-frame, and are kept constantly in connection with one another by the upward action of a spring, D, attached to the car below, and the bottom of the sliding fastener above. Now, it will be seen that ordinarily the window-frame is retained closed by this fastener B, but that any action tending to depress the fastener B will release the clutch-pieces I from the shoulder-pieces *a*, and allow the frame to fly open. Above each window-frame is located a lever, E, one end of which attaches to the upper end of the sliding fastener B, and the other to a cord or rope, G, (I now refer to Fig. 1,) which passes up and over the pulley M, and thence attaches to the rope H, which crosses over at the top of the car to the pulley L attaches to U, the spiral rod of the spiral spring C, and is firmly attached to a pin, V, in the car. The spiral spring C is a coiled spiral, but may be a band, elliptic, or any other form of spring applicable, and surrounds U, the spiral rod, as I call it, which has a knob on the outside of the spring. Now, this whole arrangement of rod and spring is outside of the car and just under the eaves. Now, in case of the overturning of the car, the spiral rod, which projects well out, will naturally come in contact with the ground, and, being pushed violently in, will, in turn, push out of line the rope H, which will draw upon all the levers E upon the opposite side of the car, to

all of which, through the medium of cords, (not shown in the drawing,) it is attached, and will depress each sliding fastener and release each window-frame, which will then fly open of their own accord, as hereinbefore described. There is a spiral rod and spring over each window on both sides of the car.

N in Fig. 2 is a ratchet-wheel, on whose axle is a drum, (not seen in the drawing,) upon which the cord S, which runs through the length of the car, is wound by means of an adjustable crank. O is a pawl, which takes into the ratchet, and holds it as desired. The outer end of this pawl projects beyond the top of the car, and in case of collision the ratchet is released, as will be understood. At the opposite end of the car is a spiral, C'', to which the cord S is attached. Now, when the crank is applied and the cord wound up, the spring will be completely compressed, and this is as it will be in its every-day use. To S attach cords, connecting with each lever E upon the side of the car on which it is, for there are two cords, S, and a ratchet on each end of the car. Now, when the cars collide, the pawls are depressed, and the springs C'', acting out by their release, jerk all the cords attached to S, and release all the windows, as before described. I also apply by the side of each seat a tassel and cord, P, Fig. 2, by which each passenger can open his own window in case of disarrangement of the automatic mechanism.

As before stated, a window or windows can be arranged in the roof, operated in a similar manner with the others. All the cords I can make of metal, and they are the strongest and most durable. I inclose all the unsightly cord-work in the roof, and make such other modifications as are consistent with the beauty of the internal adornment of the car. The por-

tions outside the car are, as far as possible, shielded from view and touch, the crank and connections being under lock and key, if desired.

I contemplate applying this my invention to all manner of inclosed cars—sleeping, day, and live-stock cars.

I wish it understood that cars constructed after the plan herein described are preferably made of incombustible material; but this in no way affects the operation of the devices for automatically opening and closing the apertures in the walls of the car; and it will be further observed that, in case a car should roll entirely over, so as to bring both sides alternately upon the ground, the apertures upon that side for the time being in contact with the earth become closed, while those on the opposite side are thrown open.

Instead of movable window-frames, movable door-frames may be used. The frames are so arranged that they cannot be opened from the outside by any person seeking to obtain entrance.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In a railroad-car, the combination of spring C, rod U, rope H, and pulleys M and L, for the opening of the frame-work of the windows upon the opposite side of the car in case of accident, substantially as described.

2. The combination of the ratchet-wheel N and pawl O with cord S and spring C'', for the opening of the frame-work of the windows, substantially as described.

HENRY B. MYER.

Witnesses:

J. BRAINERD,

I. W. COLLAMER.