(No Model.)

H. W. LIBBEY.

SAFETY GATE FOR STREET CARS.

No. 453,371. Patented June 2, 1891.

Fig. 1.

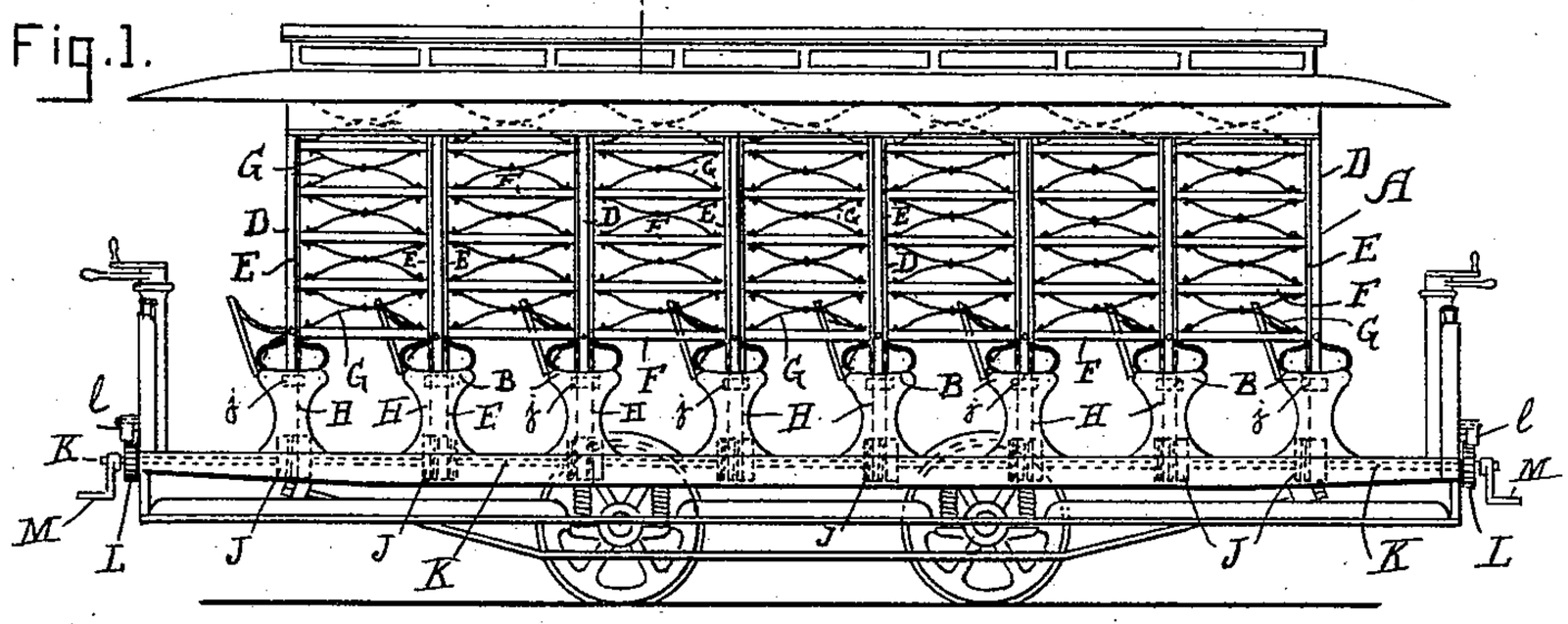


Fig. 2.

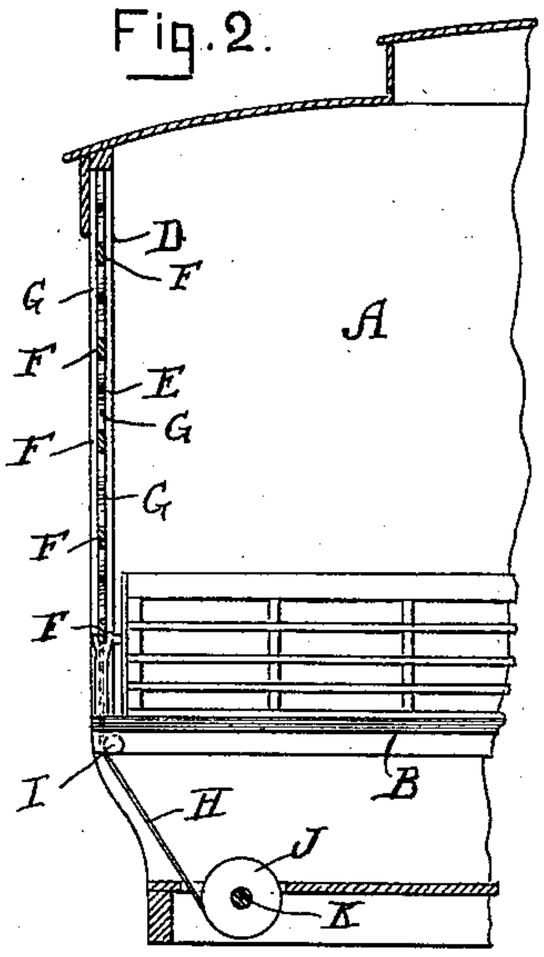


Fig. 3.

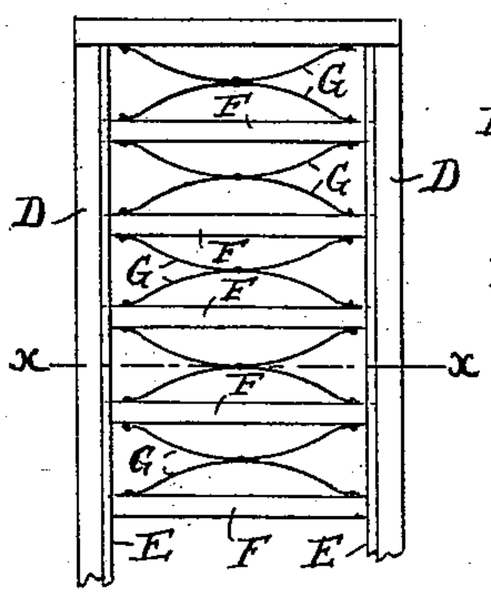


Fig. 4.

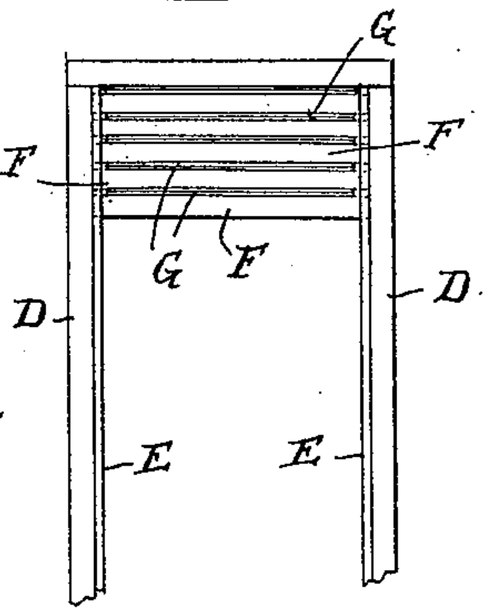


Fig. 5.

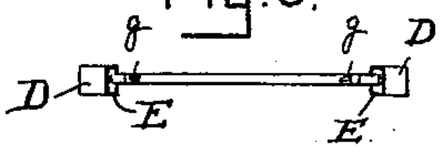


Fig. 6.

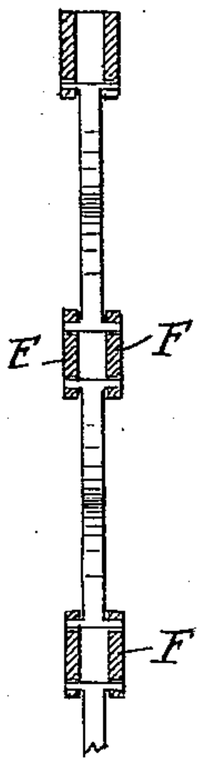


Fig. 7.

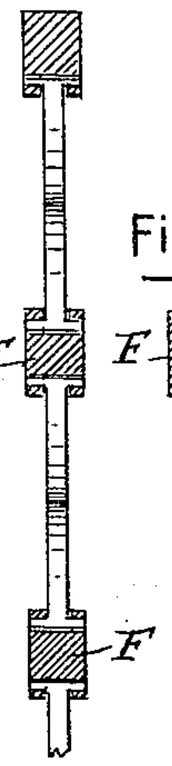
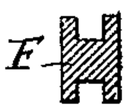


Fig. 8.



Witnesses.
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Hosea W. Libbey
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UNITED STATES PATENT OFFICE.

HOSEA W. LIBBEY, OF BOSTON, MASSACHUSETTS.

SAFETY-GATE FOR STREET-CARS.

SPECIFICATION forming part of Letters Patent No. 453,371, dated June 2, 1891.

Application filed September 20, 1890. Serial No. 365,586. (No model.)

To all whom it may concern:

Be it known that I, HOSEA W. LIBBEY, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Street-Car Safety-Gates, of which the following, taken in connection with the accompanying drawings, is a specification.

The object of my invention is to produce a safety folding gate particularly applicable for street-cars for preventing passengers from getting on or off an open car on the wrong side; and the invention consists in a series of slats arranged between the posts and connected together by means of springs, and in means for operating said slats, as hereinafter fully described, and pointed out in the claims.

Referring to the accompanying drawings, Figure 1 represents a side view of a car fitted with a safety folding gate embodying my invention. Fig. 2 is a transverse section of a portion of the same drawn to a larger scale. Fig. 3 is a front view of one of the gates, showing the same down. Fig. 4 is a similar view showing the gate up. Fig. 5 is a horizontal section taken on line *x x* of Fig. 3. Figs. 6, 7, and 8 are detail views of the slats and spring connections.

A represents an open street car, B the seats, and D the posts on the seats that support the roof. To each of the posts D are secured guides E, which may be of sheet metal bent to the form shown in Fig. 5, so as to form a groove in which the ends of slats F are free to slide. The slats are connected together by springs, as shown in Figs. 1 to 5. Two curved flat springs G are employed between each of the slats. These springs are connected together in the center by rivet, and their ends are connected to the slats by studs secured to said slats and passing through slots *g*, formed in the ends of the springs, so that when the slats are in their normal position the springs lie in a straight line, as best seen in Fig. 4; but when the slats are drawn apart the ends of the springs slide upon the edges of the slats sufficient to allow the slats to be separated the desired distance. To each end of the bottom slat is connected a cord H, that passes over a pulley I under the seat, and thence passes to a drum J, to which it is secured. These drums are mounted upon a shaft K, that runs the entire length of the car just under the floor and projects a short distance beyond the end of the platform. On the shaft, just outside the platform, is secured a ratchet-wheel L, a pawl *l*, fitting the same, being secured to the end of the platform. The ends of the shaft are formed square, so as to receive a crank-handle M.

Supposing the gates are up on one side of the car and down on the other and it is desired to reverse them, then the attendant places the handle M on the end of the shaft K on the side that the gates are up and turns the same so as to draw them down, the pawl *l* holding the ratchet-wheel L, so as to prevent the shaft turning in the direction to allow the gate to rise. After he has drawn the gates down on that side he places the crank-handle on the shaft on the opposite side and turns it so that he can release the pawl *l* from the pawl-wheel L. The springs G have now a tendency to cause the gate to fly up suddenly, but by the attendant holding the handle he can allow them to ascend as desired without any sudden movement or jar.

If desired, double slats may be employed and the ends of the springs be provided with pins on each side to work in slots in the slats. In Fig. 6 I have shown double slats connected together by springs; or instead of having double slats the slats might be solid and grooved out on their upper or lower edges to receive the springs or bars, as shown in Figs. 7 and 8.

Although I have shown and described the gates as being applied to a street-car, it is obvious that they could be employed in any place where gates are required, and instead of the ends of the slats working in grooves they might be provided with an eye on each end, said eyes running upon rods.

What I claim as my invention is—

1. A folding gate consisting of a series of slats connected together by springs, the ends of said slats working in grooves or on guides on posts, and means for operating said gate, substantially as set forth.

2. The slats F and springs G, in combination with a cord or chain H and drums J,

mounted upon a shaft, substantially as and for the purpose set forth.

3. The slats F, having a short slot at each end, in combination with springs G, pivoted together at the center and having pins or studs at their end working in said slots, and guides for keeping said slots in a straight line, substantially as shown and described.

4. In combination with an open street-car, a series of folding gates arranged between the posts on each side of car, all the gates on each side being operated by cords or chains attached to pulleys or drums on a shaft running under the floor the whole length of the car, substantially as shown and described.

5. In a folding gate, the combination of the slats F, springs G, having a slot *g* at each end and connected to the slats by pins or studs passing through said slots, guide E for the ends of the slats to run in, and cords or chains H, connected to drums J on a shaft K, for drawing the gates down, substantially as shown and described.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 22d day of August, A. D. 1890.

HOSEA W. LIBBEY.

Witnesses:
CHAS. STEERE,
EDWIN PLANTA.