

(No Model.)

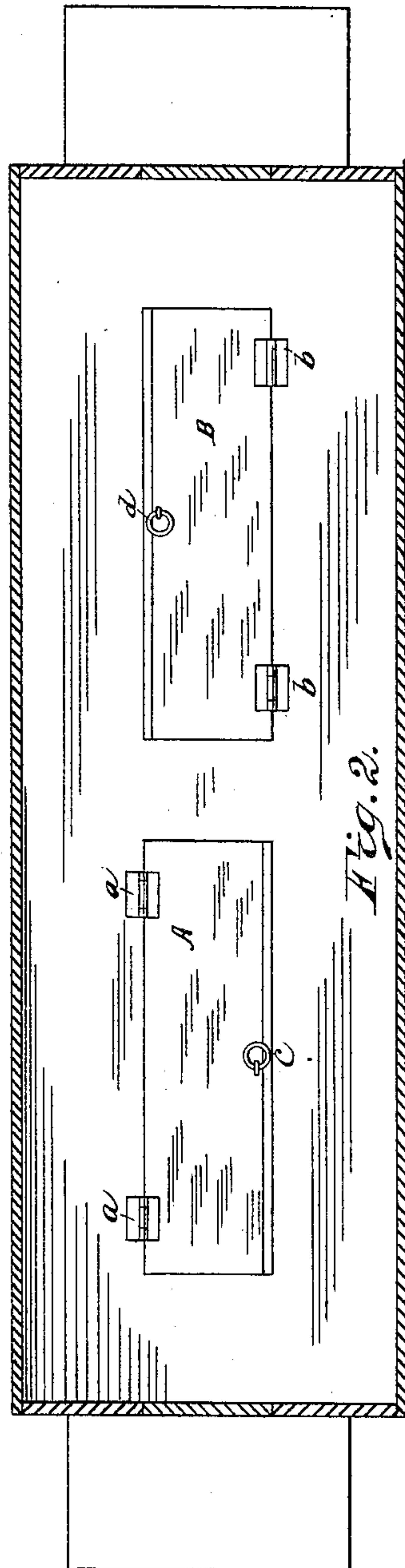
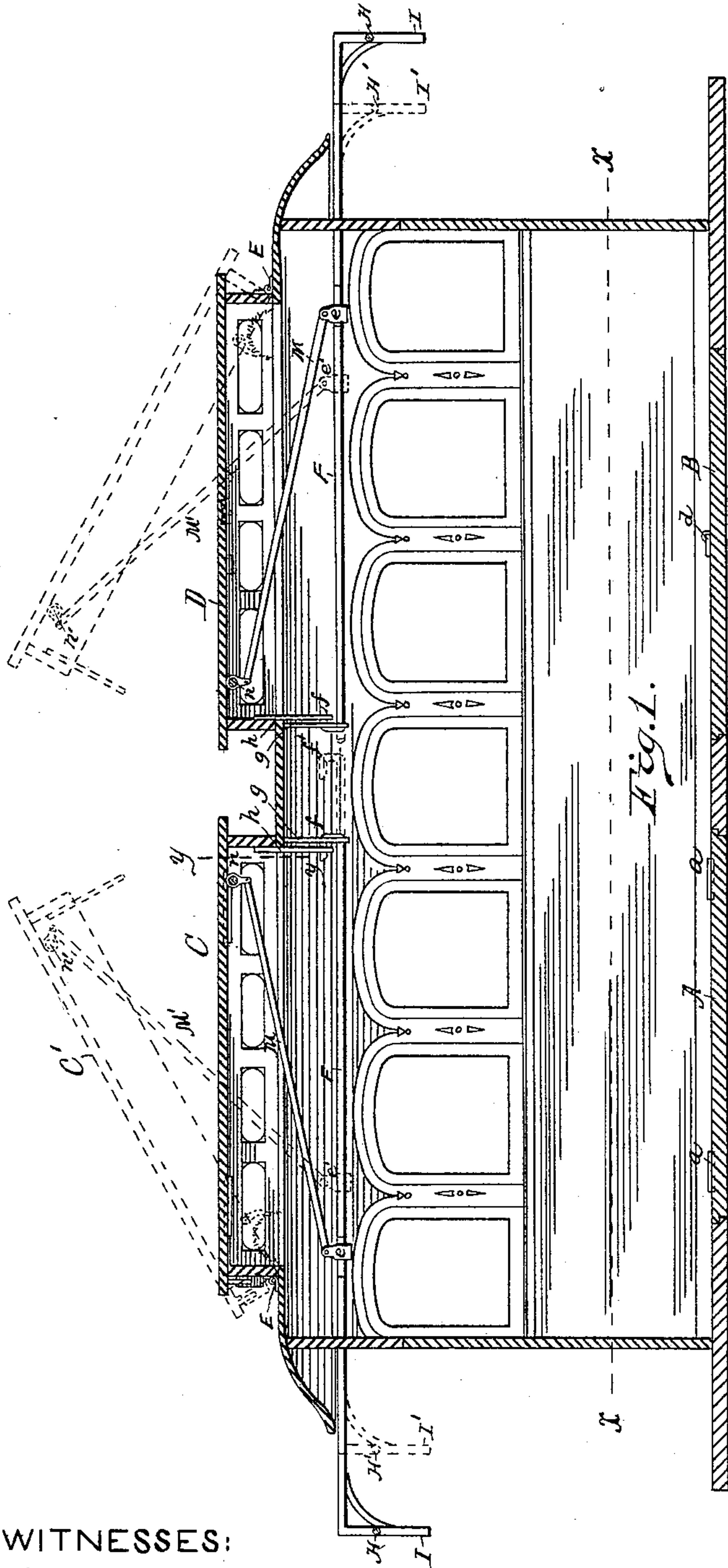
2 Sheets—Sheet 1.

A. C. MARON & A. BÖHNI.

SAFETY RAILWAY CAR.

No. 365,143.

Patented June 21, 1887.



WITNESSES:

Walter T. Bilyeu,

Frank Cronin

INVENTOR

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(No Model.)

2 Sheets—Sheet 2.

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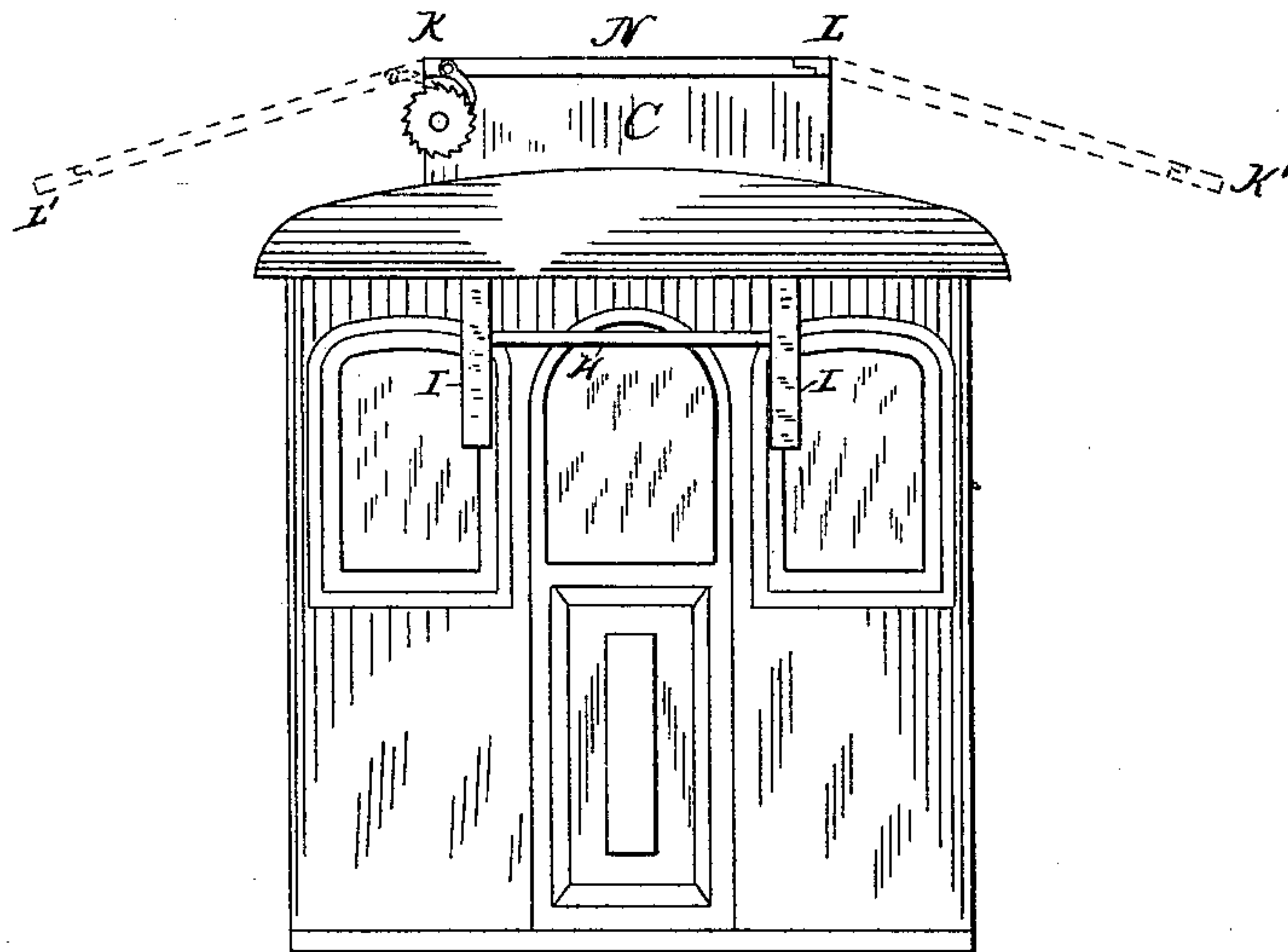


Fig. 3.

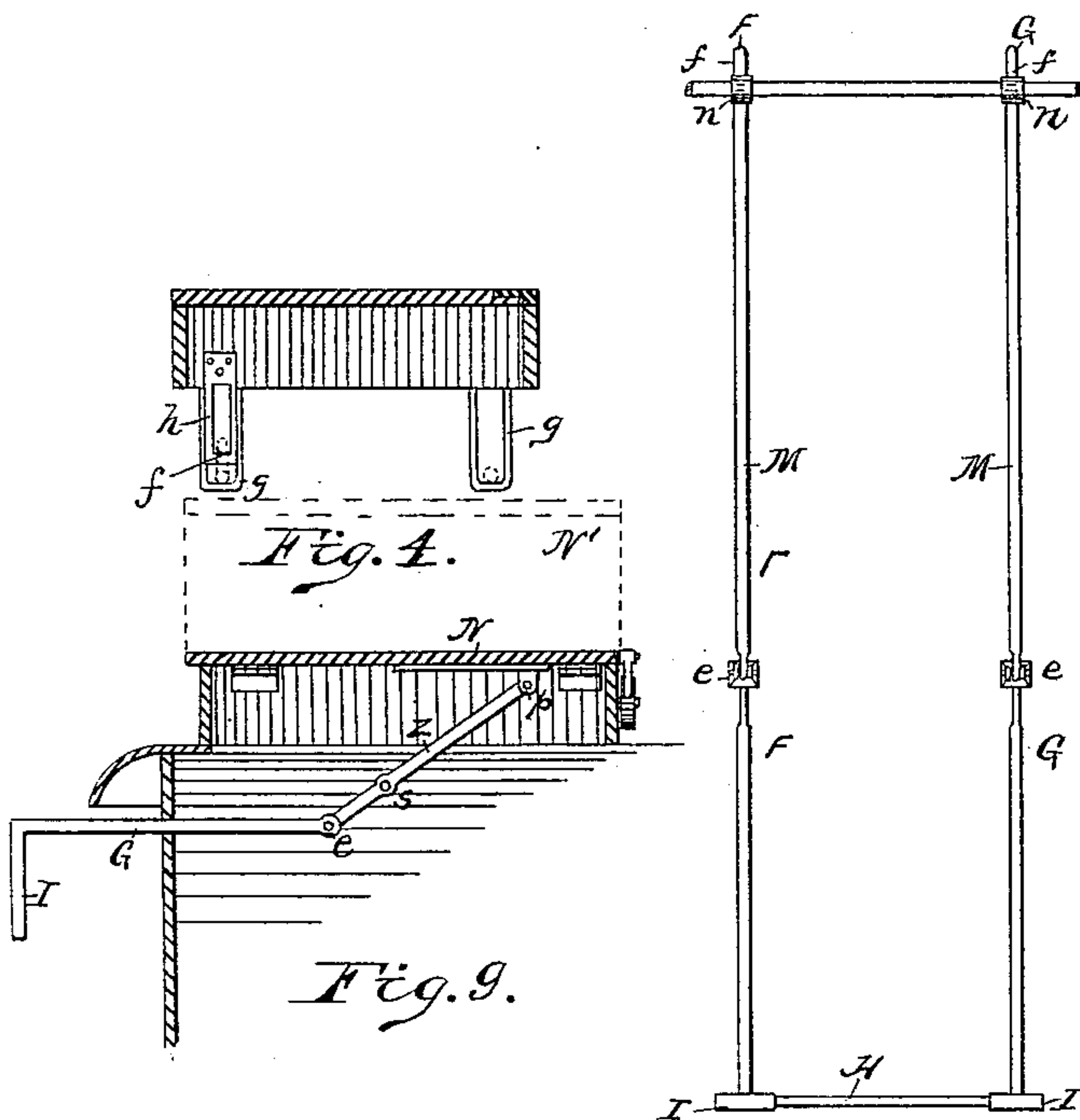


Fig. 4.

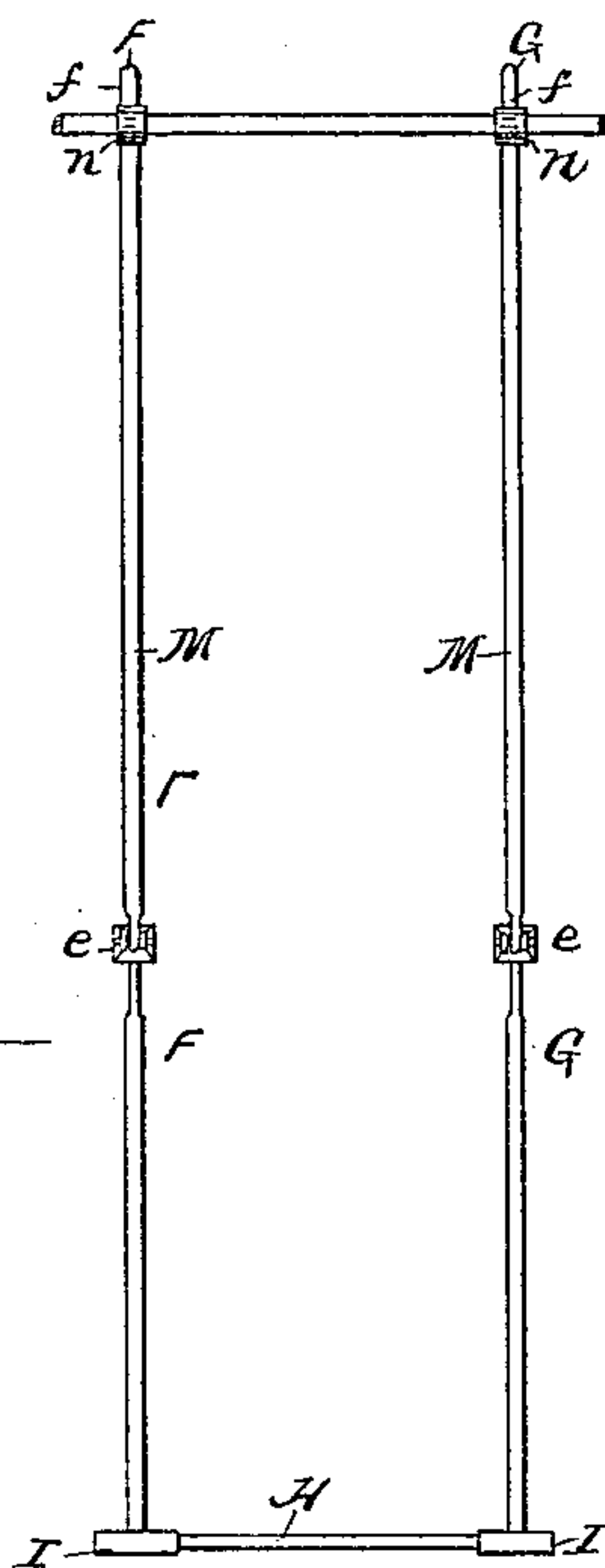


Fig. 5.

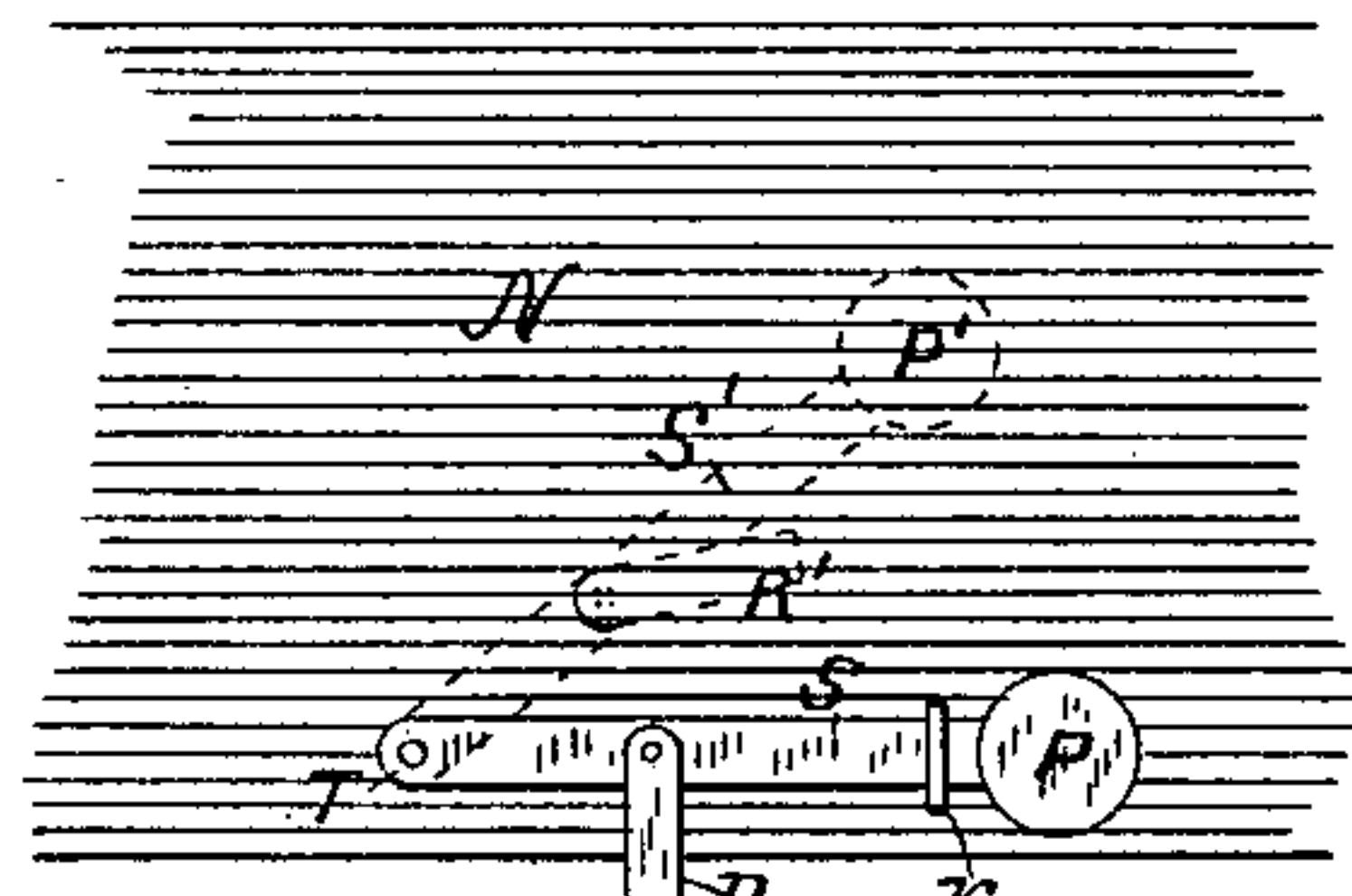


Fig. 6.

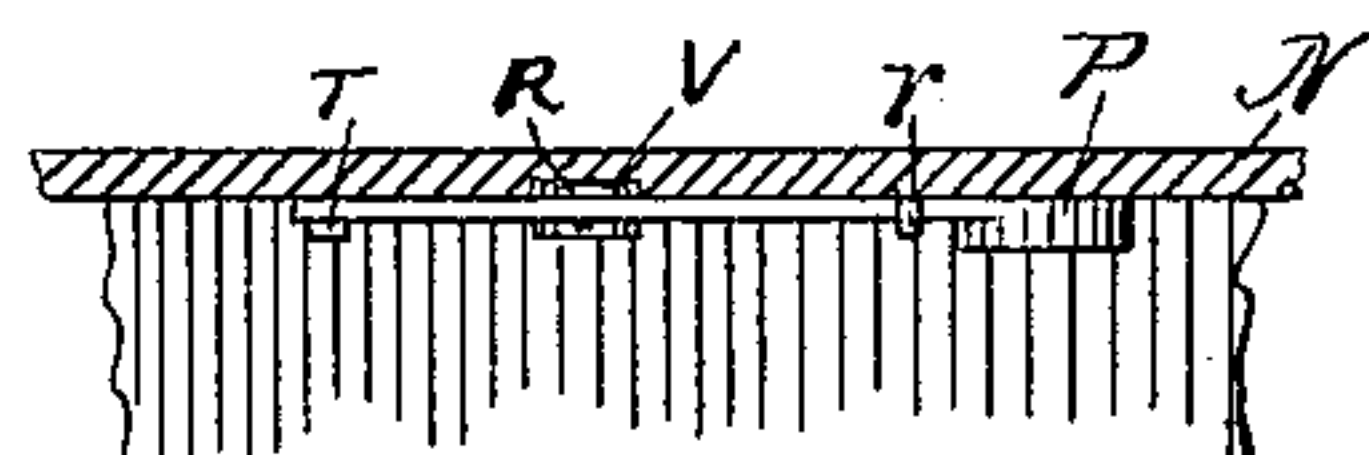


Fig. 7.

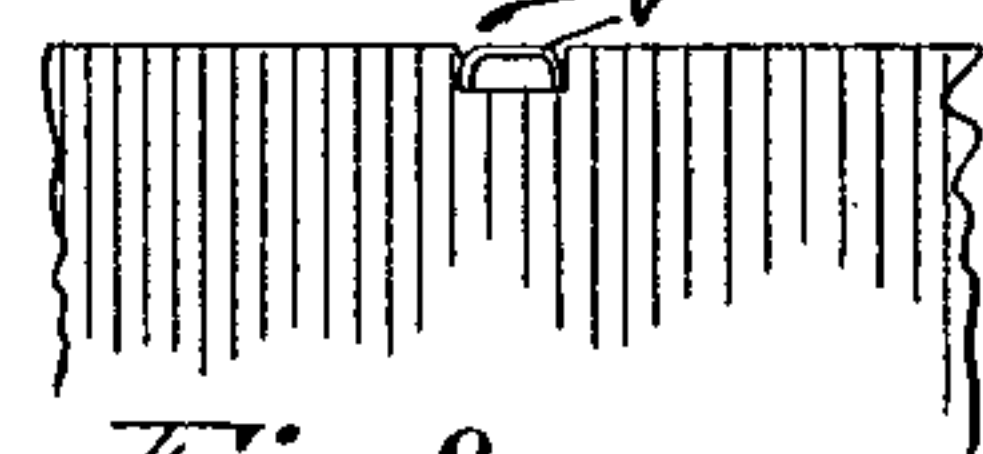


Fig. 8. INVENTOR  
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WITNESSES:  
Walter J. Bilyeu  
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# UNITED STATES PATENT OFFICE.

ALFRED C. MARON AND ALBERT BÖHNI, OF PHILADELPHIA, PENNSYLVANIA.

## SAFETY RAILWAY-CAR.

SPECIFICATION forming part of Letters Patent No. 365,143, dated June 21, 1887.

Application filed April 7, 1887. Serial No. 233,959. (No model.)

*To all whom it may concern:*

Be it known that we, ALFRED C. MARON, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia, State of Pennsylvania, and ALBERT BÖHNI, a citizen of the Republic of Switzerland, residing at Philadelphia, in the county of Philadelphia, State of Pennsylvania, have invented a new and useful Safety Railway-Car, of which the following is a specification.

Our invention relates to improvements in railway-cars in which, in case of accident, trap-doors in the floor provide a means of egress from the car. In case of telescoping a section of the roof of the car is automatically raised, thus providing a means of egress, and in case of overturning a section of the roof of the car opens automatically, thus providing a means of egress; and the objects of our improvements are to provide means of egress from the car, either through the openings in the floor or the openings in the roof, in case the ordinary means of egress are closed, because of the overturning or telescoping of the car. We attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side view of the car, showing the mechanism for raising the sections of the roof, the dotted lines showing said sections in an elevated position. Fig. 2 is a horizontal sectional view of the car on the line *x x*, Fig. 1, showing the floor of the car with the trap-doors. Fig. 3 is an end view of the car. Fig. 4 is a vertical sectional view on the line *y y*, Fig. 1. Fig. 5 is a plan view of the parallel rods shown in Fig. 1. Fig. 6 is a side view of the automatic latch. Fig. 7 is an end view of the automatic latch. Fig. 8 is a view of the staple into which the latch falls. Fig. 9 is a view of the mechanism for raising the section of the roof, being a modification of the mechanism shown in Fig. 1.

Similar letters refer to similar parts throughout the several views.

The trap-doors A and B (shown in Fig. 2) are in the floor of the car. They are fastened by the hinges *a a* and *b b*, and may be readily raised by the rings and staples *c d*, or other suitable means. We prefer that the trap-doors open in different directions, as shown in Fig. 1, the hinges *b b* being on one side of the car and the

ring and staple *c* on the other side. The trap-doors are in the aisle of the car between the seats. When the car is turned upside down, the trap-doors in the floor open automatically, or can be readily opened, and a means of egress is thus furnished.

The sections C D of the roof of the car are made of wood or other material suitable for the purpose and of sufficient strength. The sections C D are hinged at E, and may have a ratchet and pawl to prevent them from closing again when once opened. The rods F G are parallel, and are below the roof of the car, extending to the end thereof. At the ends thereof the said rods F G are screwed together by a cross-piece, H, and at the ends of the rods are the end pieces, I. At the joints *e* are attached the levers M, which run diagonally to the joints *n*, as shown in Fig. 1. At the inner ends of the rods F G are the hooks *f*, (shown in Fig. 1.) Fig. 4, which is a sectional view on the line *y y*, Fig. 1, shows the method of locking by means of the hooks *f*. When the roof C is open and in the position C', the hook *f* is in the position *f'*, the cross-piece H is in the position H', the end pieces, I, in the position I', the joint *e* is in the position *e'*, and the lever M is in the position M'. Now, if the roof be allowed to fall shut again, the staple *h* will be sufficiently shorter than the staple *g* to leave a space for the rods F G to pass between the bottom of the staple *h* and the bottom of the staple *g*. The hook *f* will catch the staple *h*, and the roof will be securely fastened. If the cars are telescoped, end pieces, I, will come in contact with similar end pieces on the next car, and the end pieces, I, will be pushed into the position I', thus automatically raising the roof of the car in the manner described and providing a means of egress from the car.

The section of the roof N, Fig. 3, may be hinged at K and securely fastened by the latch shown in Fig. 6. The hinges are at K on one of the sections of the roof, and at L on the other. When the roof opens, the top falls either into the position K L' or L K'.

The latch shown in Fig. 6 operates in the following manner: The staple V is in the side of the raised ventilating portion of the roof. The catch R is inserted in this staple, thus securely fastening the roof. If the car is turned on its side, the weight P falls into the position



P', and the catch R falls into the position R', and the bar S falls into the position S', thus releasing the section N of the roof, which falls of its own weight into the position K L' or L K'. Of course, the automatically-locking latch on one of the two sections is on the opposite side of the car from that on the other section. Fig. 7 represents the latch when the roof is closed. An L-shaped staple, *r*, may be used to sustain the weight P when the latch is closed.

The mechanism shown in Fig. 1 may be somewhat modified, as shown in Fig. 9, where I is the end piece; G, the rod; *e*, the joint; *s*, the point where the lever Z is fastened. *p* is a sliding joint. When the car is telescoped, the rod G is pushed in, and the lever Z, which is ordinarily in an almost horizontal position, assumes nearly a vertical position. The shock will throw the section of roof N up into the position N'. A ratchet-wheel and pawl prevents it from falling again.

Having fully described our invention, what we desire to claim, and secure by Letters Patent, is—

1. In combination, in a safety railway-car, sections of the roof of the car on hinges, mechanism to automatically raise the said sections

when the car is telescoped, the staples *g h*, and the hook *f*, for locking the said hinged sections, all substantially as described.

2. In combination, in a safety railway-car, the hinged section of roof N, the sliding joint *p*, the lever Z, rod G, and end piece, I, substantially as described.

3. In combination, in a safety railway-car, sections of the roof of the car hinged and the automatic latch T R P.

4. In combination, in a safety railway-car, trap-doors in the floor of the said car, opening in different directions, sections of the roof of the said car hinged, mechanism to raise the said hinged sections when the car is telescoped, the staples *g h*, and the hook *f*, for locking said sections.

5. In combination, in a safety railway-car, trap-doors in the floor of said car, opening in different directions, sections of the roof of the said car hinged, mechanism to raise the said hinged sections, and the latch T R P, and the staple V, for locking said sections.

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