(No Model.) 2 Sheets—Sheet 1.

W. T. SHAFFER.

ELEVATED RAILROAD CAR.

No. 468,699. Patented Feb. 9, 1892.

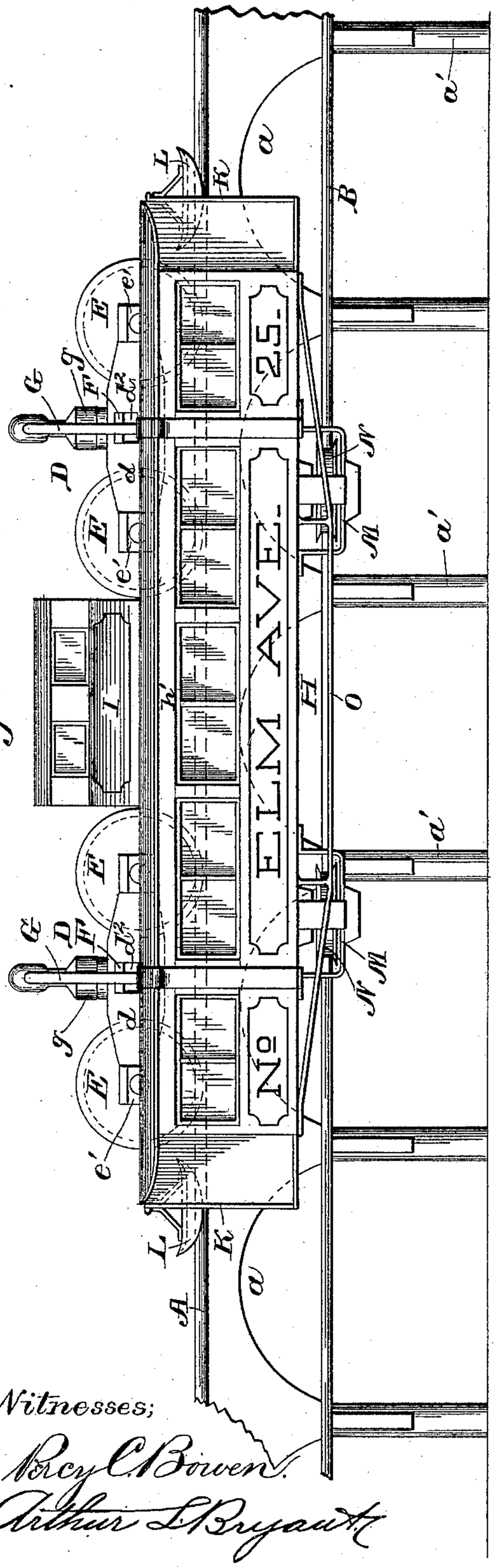

Fig. 1.

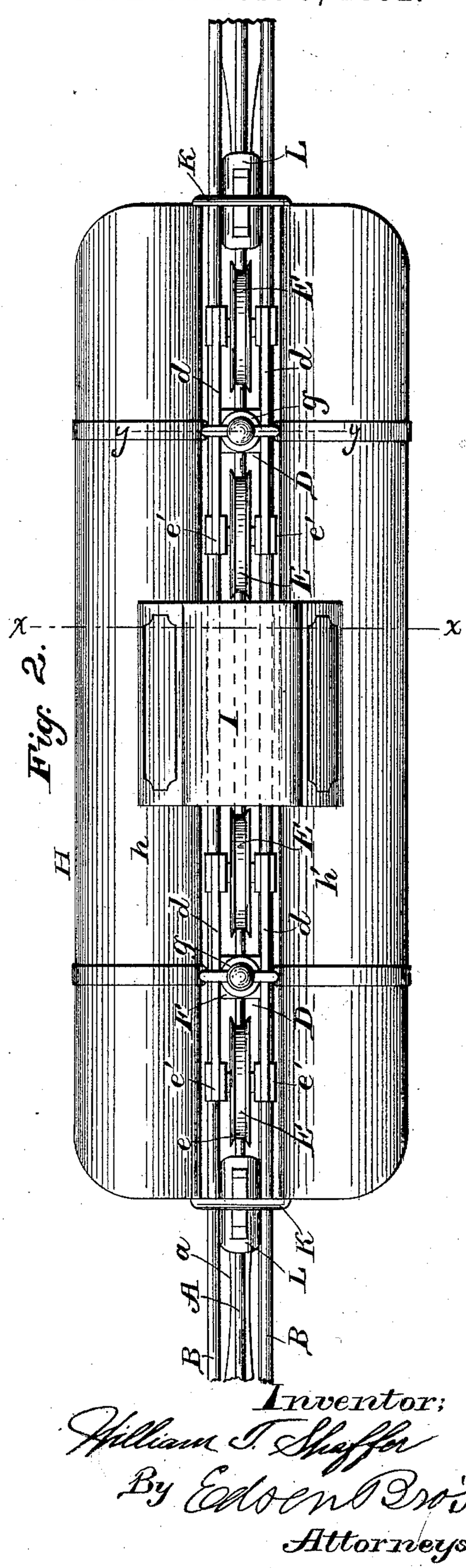

Fig. 2.

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

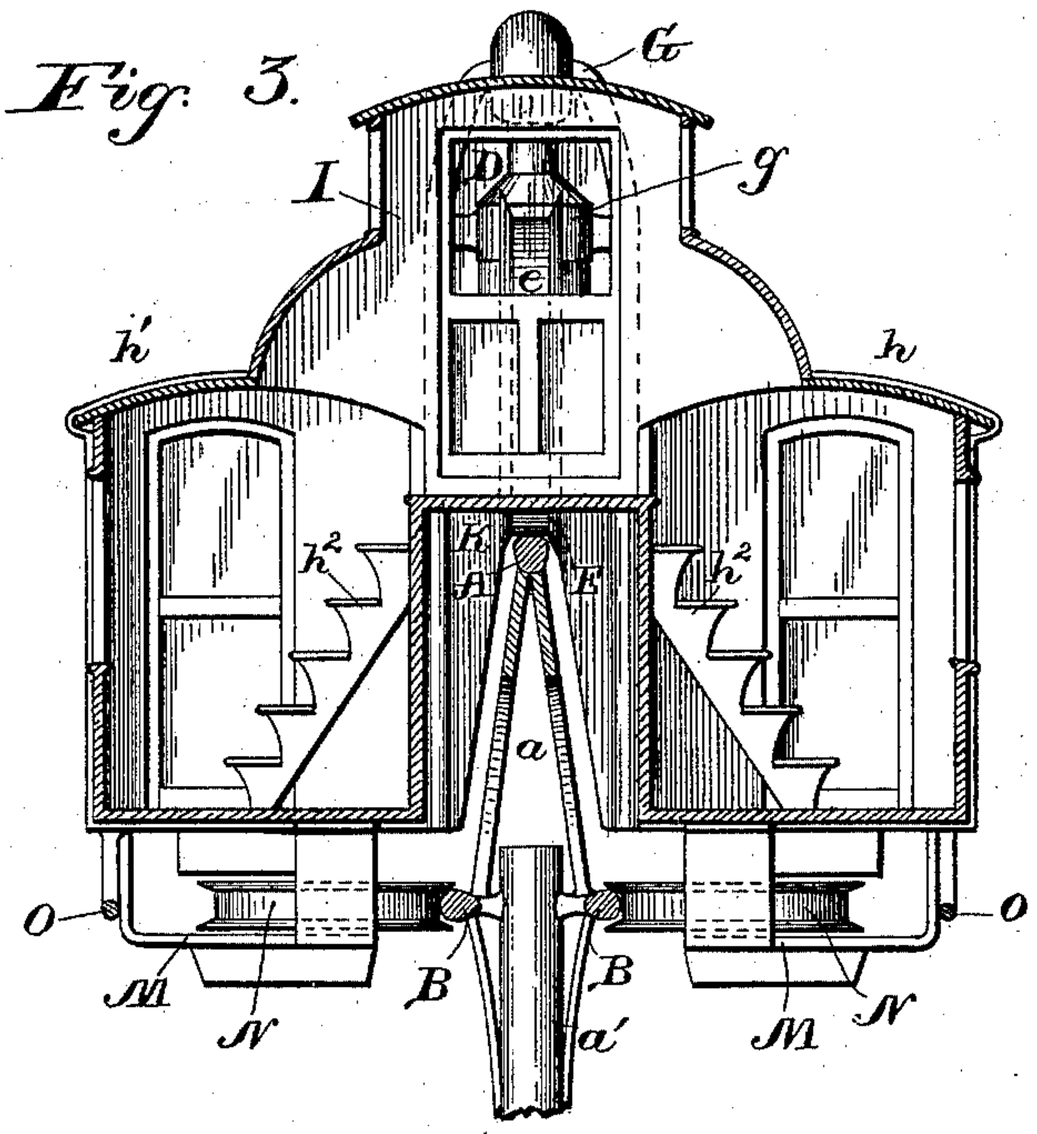


Fig. 5.

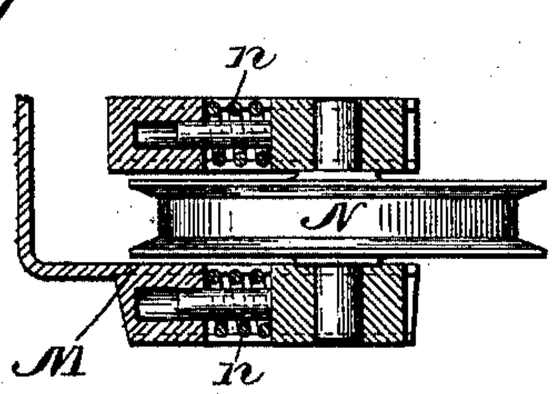


Fig. 6.

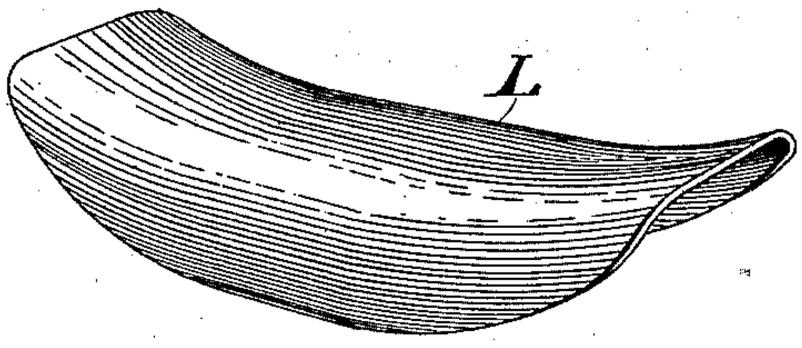
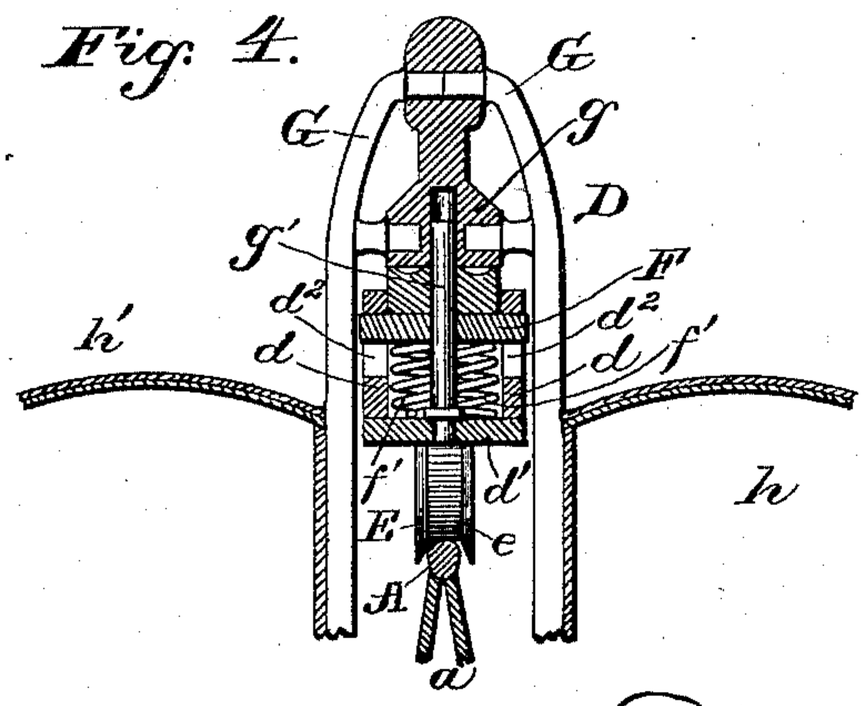


Fig. 4.



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UNITED STATES PATENT OFFICE.

WILLIAM T. SHAFFER, OF EVANSTON, WYOMING.

ELEVATED-RAILROAD CAR.

SPECIFICATION forming part of Letters Patent No. 468,699, dated February 9, 1892.

Application filed August 15, 1891. Serial No. 402,743. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM T. SHAFFER, a citizen of the United States, residing at Evanston, in the county of Uinta and State of Wyoming, have invented certain new and useful Improvements in Elevated Railroads; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in elevated railways; and the object of the invention is to provide a railway on which a much higher speed can be maintained and which will be much safer than roads as at present constructed.

With these ends in view my invention consists in the combination, with a single rail supported on a suitably braced and connected structure, of guide-rails secured to said structure below and on opposite side of said main rail, a car comprising two connected compartments arranged on opposite sides of the track, carrying-wheels connected to the top of said car and riding on the main rail, and guide-wheels secured in suitable brackets on the under side of the car and riding against the guide-rails to steady and hold the car in proper position on the track.

My invention further consists in an improved device for stopping the car without danger to the passengers should one or more of the carrying-wheels become broken while the train is running at a high rate of speed.

My invention further consists in the peculiar construction and arrangement of parts, as will be hereinafter more fully pointed out and claimed.

To enable others to more readily understand my invention, I have illustrated the same in the accompanying drawings, in which—

Figure 1 is a side view of a railroad and car constructed in accordance with my invention. Fig. 2 is a top plan view of the same. Fig. 3 is a transverse vertical sectional view on the line *x x* of Fig. 2. Fig. 4 is a vertical sectional view on the line *y y* of Fig. 2. Fig. 5 is a detail sectional view through one of the guide-wheels below the car, and Fig. 6 is a detail view of one of the safety-shoes and rail-brake.

Like letters of reference denote corresponding parts in all the figures of the drawings, referring to which—

A designates the single main rail of my improved road, which is supported at the desired elevation above the ground upon a suitably braced and connected structure or frame *a*, which in turn rests upon a series of posts or pillars *a'*, which are securely fixed in the ground at regular intervals. These posts or pillars *a'*, which support the track, are preferably made of iron; but in passing through a heavily-timbered section of country it may be found desirable, in order to reduce the expense of constructing the road, to use wooden pillars or posts. Below and on opposite sides of the main rail A are arranged parallel guide-rails B, which are suitably secured by braces to the posts or pillars *a'* and extend parallel to the main rail, but in different vertical planes. I would have it understood that I do not confine myself to any particular frame for supporting the track.

D designates the trucks of my improved car, which consist of two parallel strips or plates *d*, said plates being connected by a flat piece or plate *d'*, and in the side members *d* of the trucks and near the outer ends thereof are journaled carrying-wheels E, each of which is provided with a peripheral groove *e*, adapted to receive the main rail A of the road. Each of the wheels E is provided with two oil or journal boxes *e'*. In the side members *d* of the trucks are formed aligned vertical slots d^2, in which are fitted the reduced ends of a bearing-plate F, and between the plates *d'* and F are arranged a series of coiled or cushioned springs *f'*. On the plate F is seated a turret *g*, into which extends a spindle *g'*. The spindle *g'* passes through an aperture in the plate F and is connected at its lower end to the plate *d'*, and through the upper portion of the turret *g* passes a yoke G, the ends of which are connected to the car H.

The car H, as shown, consists of two longitudinal parallel compartments *h h'*, arranged on opposite sides of the track and being mostly below the top of the rail A. Each of the compartments is arranged and divided and seats arranged therein in any preferred manner; but each is provided with a stairway h^2, which leads to a small compartment or cabin I, arranged above the car and between the com-

partments thereof. This cabin, besides serving as a covered way for passengers to pass from one compartment of the car to the other, is designed to be used by the employés of the road, and from such cabin access can easily be had to the carrying-wheels and running-gear of the car to oil or otherwise properly attend to the same.

The two compartments of the car are connected at their ends by partitions or end pieces K, which are slotted or divided to pass over the track, and in the upper ends of these slots are secured shoes L, which are grooved longitudinally on their under or lower faces and turned up slightly at their ends. Should any break occur in the running-gear while the train is in motion, the shoes L would contact with the rail A, and thus support the car in its normal position with relation to the track and at the same time soon bring the car to a standstill. The grooved shoes L are made of such size that the lower edges thereof extend below the edges of the rail A, and in case of accident effectually center such rail therein.

On the bottom of each compartment of the car are attached suitable frames M, which consist of a flat base-plate and a series of arms formed integral with or rigidly attached to such base and bent upwardly, the upper ends of said arms being securely fastened to the floor of the car. Within each of these frames M is journaled a guide wheel or roller N, which is provided with a peripheral groove in which one of the guide-rails B fits. On both sides of the shaft or axle of the wheel N are arranged short coiled springs *n*, which serve to allow such shaft and its attached wheel a limited amount of side or lateral play which is very beneficial in rounding curves. The car is also pivotally connected to the trucks, as before described, so that the latter can turn slightly in rounding curves and the motion of the car thus be reduced. Truss-rods O extend longitudinally of the car and bear against one of the upturned arms of the frames M, and thus steady and strengthen said frames.

My improved car may be propelled by electricity, steam, or any other desirable and practicable power, and the advantages and mode of operation will be readily understood from the foregoing description, taken in connection with the drawings.

I am aware that changes in the form and proportion of parts and details of construction of the devices herein shown and described as an embodiment of my invention can be changed without departing from the spirit or sacrificing the advantages thereof, and I therefore reserve the right to make such changes and alterations as fairly fall within the scope of my invention.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with an elevated track, of a car having its compartments arranged on opposite sides of the track, said compartments being united by pieces K and a passage-way I, which extends over the track, carrying-wheels pivotally connected to the car between the passage-way I and the pieces K, and brake-shoes carried by the pieces K and provided with a longitudinal groove in their lower faces, the edges of said groove extending below the edges of the track, substantially as described.

2. The combination, with a single elevated rail and the guide-rails arranged below and at the sides of the main rail, of the car having its compartments arranged on opposite sides of the main rail and connected by a passage-way leading over such rail, the carrying-wheels mounted in suitable trucks between the compartments of the car and contacting with the main rail, the plate F, having its ends fitted in slots in the side members of the truck, a coiled spring arranged between said plate and the cross-bar of the truck, a turret mounted on the plate F, and yokes connecting said turret with the compartments of the car, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM T. SHAFFER.

Witnesses:
CHARLES G. EPPERSON,
JOHN H. WARD.