

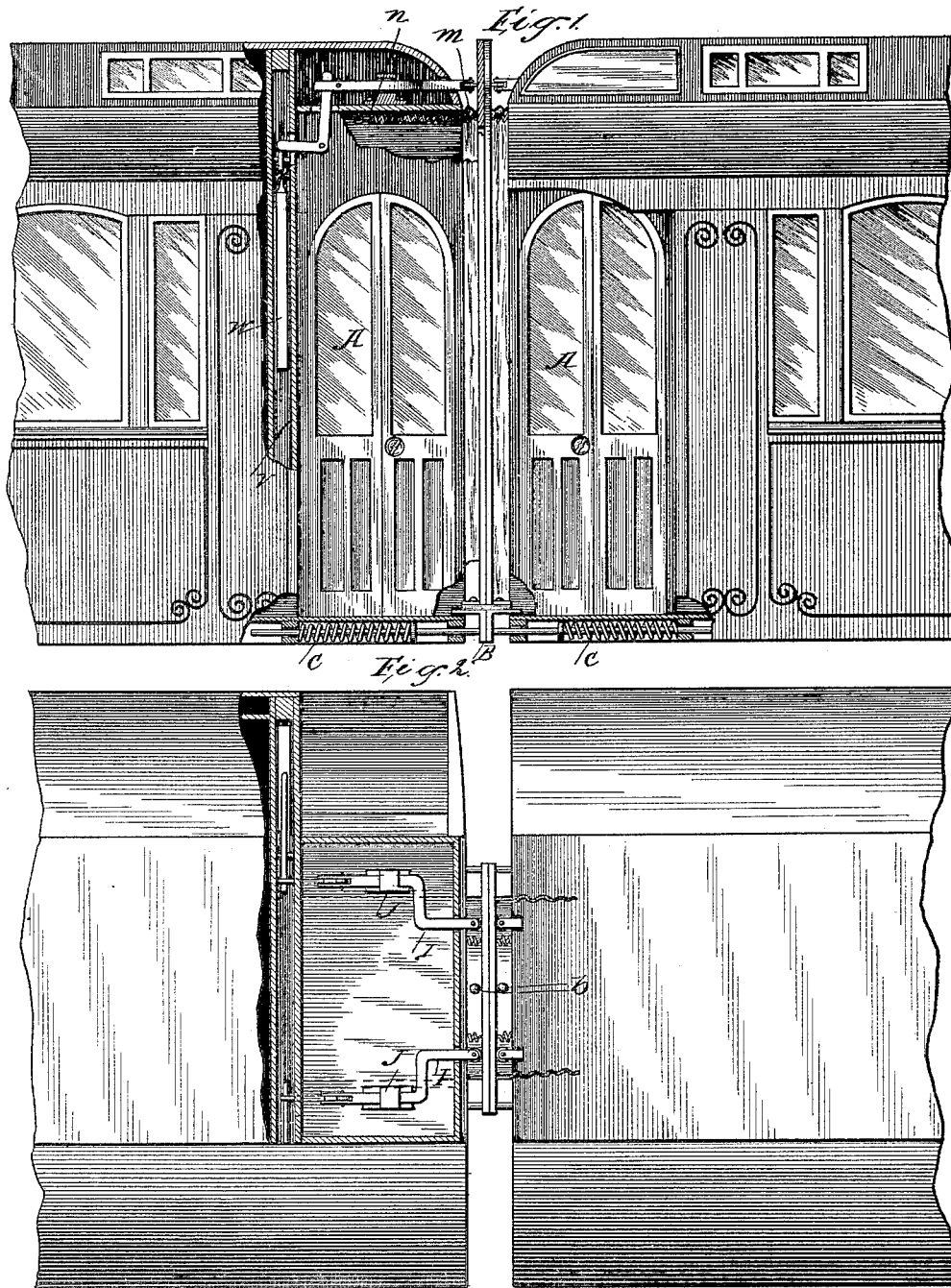
(No Model.)

2 Sheets—Sheet 1.

J. RIDGE.
VESTIBULE CAR.

No. 418,929.

Patented Jan. 7, 1890.



Witnesses.
W. M. Rhum.
J. R. Andrews.

Inventor.
Joseph Ridge

(No Model.)

2 Sheets—Sheet 2.

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Fig. 3.

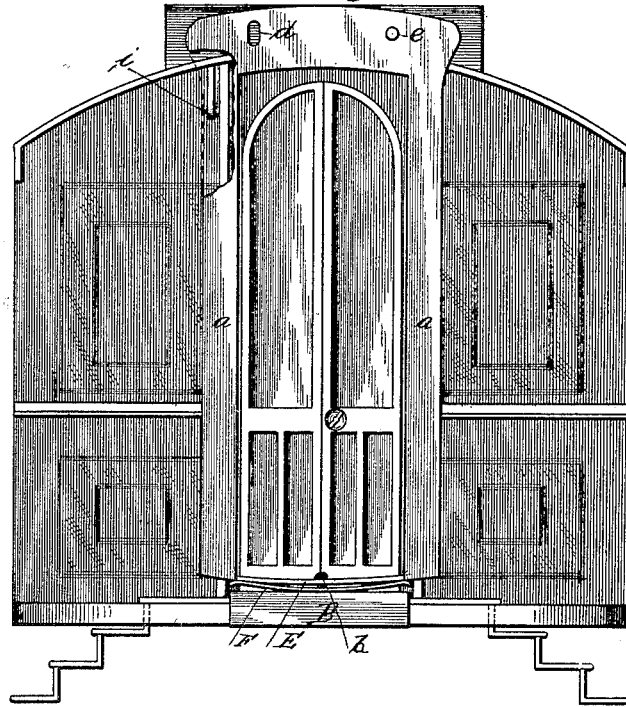
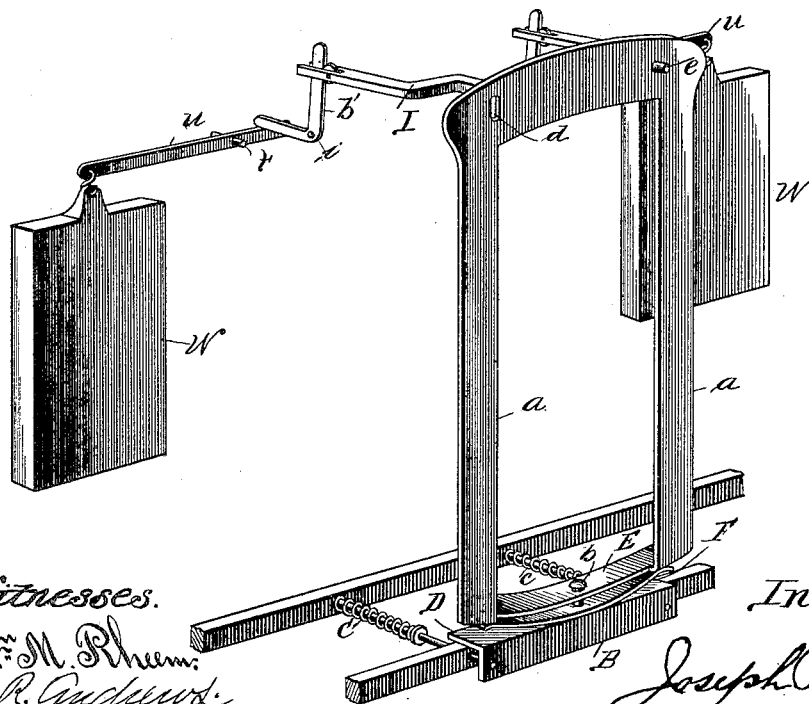


Fig. 4.



Witnesses.

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UNITED STATES PATENT OFFICE.

JOSEPH RIDGE, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO ALBERT RANSOM, OF SAME PLACE.

VESTIBULE-CAR.

SPECIFICATION forming part of Letters Patent No. 418,929, dated January 7, 1890.

Application filed October 10, 1889. Serial No. 326,621. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH RIDGE, of Chicago, county of Cook, and State of Illinois, have invented new and useful Improvements in Cars, of which the following is a description.

My invention relates to ends of cars wherein the coupling of one car with another under the requirements affords advantages over that obtained as cars are usually constructed. These features relate, first, to so uniting one end of a car with the end of another car that an inclosed passage-way between the cars is the result. Another feature, perhaps quite as important, is to restrain lateral play of the cars when in rapid motion. Another feature is to prevent as much as practicable the impact of one car against another.

I am aware that vestibule-cars are in use in which the advantages above outlined are said to obtain, and, in a measure, it is no doubt true. It is, however, important to improve these features of a train of cars. For example, plates attached to the buffers of the cars that extend to the roofs of the latter and supported against impact by springs located in the superstructure are in use, as well known. This construction, while an inclosure is well obtained between cars, does not to a suitable degree, by friction, which is depended upon, restrain lateral play of the cars. To obtain better results in the matter of oscillation I resort to springs.

By reference to the drawings, Figure 1 is a side elevation showing portions of two coupled cars, with portions broken away to expose mechanism. Fig. 2 is a top view with mechanism exposed. Fig. 3 is an end elevation, and Fig. 4 a detail view.

The solid vestibule built upon the platform of the car, in which the projecting roof of the latter forms the top and having entrance-doors A, may conform to those of well-known construction. The buffer-plate B at the front of the platform, with springs C to back it, is also designed to be the same or similar to those in common use. The foot-plate D, which moves with the buffer to bridge the space between platforms of adjacent cars, I show as a part of the buffer-plate whereby to obtain strength

and as a convenient means of attaching a superstructure portion, as hereinafter set forth. This portion consists chiefly of a plate or frame *a*, extending from the buffer to the top of the car, or approximately so. These plates have their lower ends attached to a rocker E, which is pivotally supported on a curved or semi-elliptical spring F, the pivot being shown at *b*, centrally of the rocker, in such manner that the latter may have an oscillating action while the spring is restrained as to such movement.

At or near the upper portion of plate *a* are provided on one side a slot *d* and on the other a pin or stud *e*. These are designed to lock plates of adjacent ends of cars. As evident, if cars are constructed the same with reference to this feature of my invention, any car will interlock with any other—that is, the pins or apertures will alternate throughout a train, and thereby adapt the end of one to that of another.

Herein I design to restrain oscillation of cars when traveling. As evident, when the plates *a* of two cars interlock, the cars may have lateral movement under restraint of springs F. These may be made of any desired strength or of any form that will operate to subdue lateral oscillation. The slots *d* are elongated vertically to allow for any variation of that kind which may occur between coupled cars. The plates *a* need not necessarily have breadth of surface as buffers in which the face of a plate on one car bears against that of the one on the adjacent car, but may be constructed so that its breadth coincides with the car's length, or in any desired shape, if the locking of adjacent ones be provided for. It is desirable, if the plates are not in actual contact, for reasons hereinafter shown, that there should be intermediate means of bracing between the two, which, in this example of the construction of plate, may be done by shoulders on the pins or studs *e* to engage the sides of the slots *d*. By this means they assist the buffer B in its function of preventing contact between platforms. To aid in this respect, I have provided bars I, located at the roof of the car and within the vestibule, preferably, that have a sliding

movement longitudinally in bearings J, and so arranged that their outer ends bear against plate *a* near its top. These bars are actuated by means of levers and weights in the present example. To bring their outer ends more centrally of the plate *a* at its upper portion, and at the same time not interfere with a lamp in the dome of the vestibule, an angle is formed, as illustrated.

10 In the ends of the car, within the walls thereof, vertical channels V, for the reception and accommodation of weights W and levers *u*, are provided. Pivotal provision *t* is made for lever *u*. A connection is made between

15 lever *u* and the bars I by an interposed lever *b'*, which is pivoted at its angle to the side of the vestibule, as shown in Fig. 1. One end of lever *b'* resting upon the inner end of lever *u*, and its upper end bearing against the inner end of bar I, makes it apparent that when

20 said lever *u* is actuated upon its pivot *t* by the weight W bar I is forced forward against plate *a*. As the bars I are fixed as to lateral movement and the plate *a* in its lateral oscillation plays across them, rollers are provided in their ends to prevent friction. The

25 inner ends of said bars are bifurcated for the better security and accommodation of the ends of levers *b'*, and are also provided with anti-friction rollers. A flexible portion M

30 between the plate *a* and the end of the car is supplied to complete an inclosure between cars which has sufficient fullness to permit the lateral movement of the car with relation to said plate. The spiral springs *n*, shown

35 just beneath the car-roof, that are fastened to the latter and to plates *a*, have their tension inwardly, and are designed to support the flexible portion M, and also to steady the frame-plate. In the event that the frames

40 are set back from the faces of the buffers B and have interposed braces between two adjacent frames near their upper portions, whereby, as previously mentioned, space occurs, flanges equal to such space or greater

45 may be applied to the faces or edges of said frames projecting forward and in extent equal to one-half that of the frame—that is, from the center of the latter at the top to the

50 bottom and on corresponding sides. Thus when frames are brought together one will be a counterpart of the other, as in the case

of the apertures *d* and studs *e*, thereby closing the entire space between cars. For such flanges flexible self-expanding material would perhaps be preferable.

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

1. The combination, with the platform-buffer of a car, of a frame or arched plate adapted to form the margin of a passage-way between cars that is so pivotally mounted upon said buffer as to permit oscillation, the latter being restrained by springs, substantially as set forth.

2. On each of adjacent cars coupled together, frames or plates extending to the roof of the car, or approximately so, that are respectively pivotally supported upon the buffers, with restraining force between a buffer and frame to aid in restoring a normal condition under oscillating movement, said frames or plates having provision for interlocking one with another.

3. The combination, in adjacent cars coupled together, of plates or frames *a*, that are provided with interlocking devices to connect one with the other, and so pivotally mounted, respectively, on the buffers with spring-connections as to permit oscillation under restraint.

4. The combination, with the platform-buffer of a car, of a frame reaching to the roof of the car, or approximately so, that is so pivotally connected with said buffer as to permit lateral oscillation under restraint of springs, and is backed by a bar or bars projecting from the superstructure of the car, substantially as and for the purpose specified.

5. The combination, with frame-plate *a*, having lateral oscillation under spring restraint and connected with buffer B, of the bar or bars I, weight W, and a lever or system of levers actuated by said weight and operating against the bars to resist inward pressure against said plate *a*, substantially as set forth.

JOSEPH RIDGE.

Witnesses:

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