(No Model.)

W. W. GREEN.

RAILWAY CAR.

No. 447,053. Patented Feb. 24, 1891.

Fig. 1.

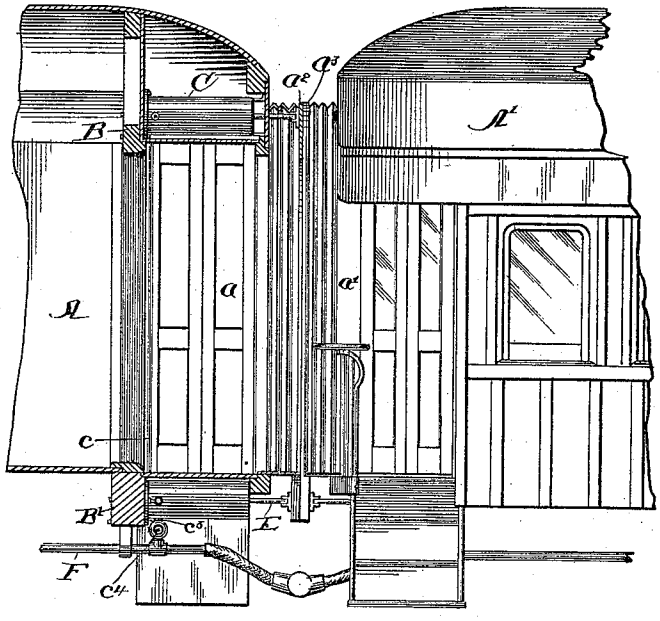


Fig. 2.

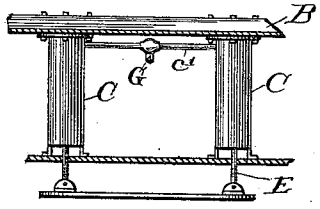


Fig. 3

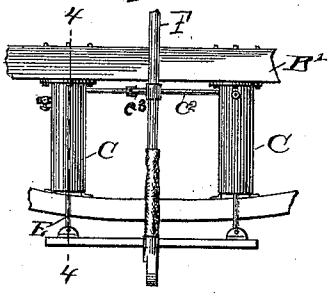
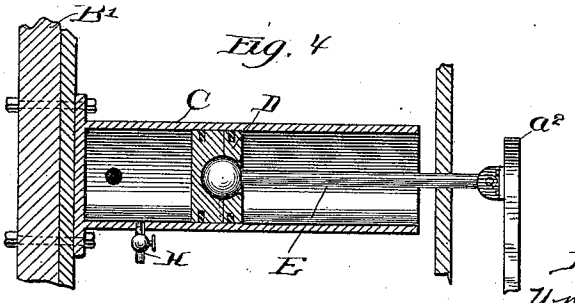


Fig. 4



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UNITED STATES PATENT OFFICE.

WILLIAM W. GREEN, OF CHICAGO, ILLINOIS.

RAILWAY-CAR.

SPECIFICATION forming part of Letters Patent No. 447,053, dated February 24, 1891.

Application filed October 25, 1890. Serial No. 369,283. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM W. GREEN, a citizen of the United States of America, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Railway-Cars, of which the following is a specification.

My invention relates to that class of railway-cars known as "vestibule-cars," and is applied to the vestibules of said cars to keep the chafing-plates thereof pressed tightly together when the cars are coupled up. It is exceedingly important that this be done, as the oscillation of the cars is very materially lessened by the friction between these chafing-plates. The better form of vestibules that have been heretofore constructed contain springs applied and arranged to press the chafing-plates together. As it is desirable that the friction between these chafing-plates should be equalized throughout all portions, the use of springs necessitates some sort of balancing-lever connection, which renders the construction of the vestibules more difficult, and besides this disadvantage the springs themselves are comparatively short-lived and their tension subject to constant variation.

It is the purpose of my invention to cushion the chafing-plates upon an elastic medium, which shall be kept at a predetermined tension, and which shall be automatically renewed in case of loss during the running of the train and also be easily removed and replaced when the cars are uncoupled or coupled up.

My preferred construction is shown in the drawings attached to this specification, in which—

Figure 1 is a side view of the adjacent ends of two vestibule-cars coupled together, one of said cars being partly in vertical longitudinal section to reveal my improvements. Fig. 2 is a detail view of the portion of said improvements applied to the upper part of the vestibule. Fig. 3 is an under view of the lower portion of said improvements, and Fig. 4 is a vertical section taken in line 4 4 of Fig. 3.

Describing the preferred construction here shown by means of reference-letters, A A′ are applied to the cars, respectively, *a a′* to the vestibules attached to said cars, and a^2 a^3 to the chafing-plates, which are brought together when the cars are coupled up. It is immaterial to what parts of the chafing-plates the supporting devices are applied or how many of such devices are employed. I prefer, however, to support said plates at the four corners. For this purpose I mount upon the beams B and end sills B′ of the cars four cylinders C, rigidly secured to said beams and sills at one end and open at the opposite end. To the interior of each of these cylinders I fit a piston D, (see Fig. 4,) connected by a universal joint to a piston-rod E, which extends outward to the chafing-plate a^2 and is pivotally secured to its respective corner of said chafing-plate. The interiors of the cylinders C are connected by a vertical pipe *c* (see Fig. 1) and horizontal pipes *c′* c^2, (see Figs. 2 and 3,) so that whatever pressure may be admitted to any of these cylinders will be equalized throughout all four.

From the pipe c^2 (see Fig. 3) I lead a pipe c^3 to the train-pipe F of the air-brake apparatus, and in said pipe c^3 I interpose a limiting and reducing valve c^4, of ordinary construction, adapted to admit air at a reduced pressure from the train-pipe to the cylinders C. The latter cylinders are made of sufficient size so that the pressure employed in the same may be placed below the minimum pressure employed in the train-pipe, and the limiting-valve c^4 is adjusted to this pressure, so that said pressure will be supplied at all times up to the predetermined limit without regard to the pressure in the train-pipe. This, it will be seen, will cause the limiting-valve to also operate as a check-valve, as any increase in the pressure in the cylinders will close the same and prevent a disturbance of the train-pipe pressure. To provide a relief for such temporary increase of pressure, I apply to the connecting-pipe *c′* an escape-valve, which may be of any desired form, the one here shown being an ordinary pop-valve G, and which should operate by means of a weight or spring, preferably the latter, to open and allow a portion of the air to escape whenever the pressure within the cylinders and connecting-pipes exceeds that which has been determined upon. I also provide an ordinary petcock leading from some portion of the cylinders or their connecting-pipes—as,

for instance, at H in Fig. 4—by means of which the air may be discharged when the cars are uncoupled.

My different improvements may be used either conjointly or separately, and I do not intend to limit myself to any combination thereof, except so far as definitely pointed out in the claims appended thereto. I supply the interiors of the cylinders C with compressed air from the train-pipe merely because that is the most convenient source. If preferred, however, a pump may be arranged so as to be automatically operated either by the swinging of the cars or from the axles thereof, either of which I should consider, as far as the broad features of my invention are concerned, as the equivalent of the devices here shown.

I prefer the cylinders C and the pistons therein to any other construction that I have as yet devised; but, if preferred, a diaphragm may be substituted for the piston, or a bellows attached at one end of the car and at the opposite end to the chafing-plate may be substituted for both cylinder and piston.

I claim as new and desire to secure by Letters Patent—

1. The combination, in a car-vestibule, of a chafing-plate, a receptacle provided with means for supplying its interior with compressed air at a constant and limited pressure, an escape-valve leading from said receptacle and adapted to permit air to pass therefrom whenever the pressure therein exceeds a predetermined maximum, and a connecting device between the chafing-plate and the receptacle, adapted to transmit the pressure of the air in the latter to the chafing-plate, substantially as described.

2. In a railway-car, the combination, with the train-pipe of the air-brake, of a receptacle for compressed air, a connecting-pipe between said receptacle and the train-pipe, a reducing-valve interposed in said connecting-pipe, a chafing-plate, a connecting device adapted to transmit the pressure of the air in the receptacle to the chafing-plate, and an escape-valve leading from the receptacle and adapted to allow the air to escape when the pressure exceeds a predetermined maximum, substantially as described.

3. In a railway-car, the combination, with the train-pipe of the air-brake, of a receptacle for compressed air, a connecting-pipe between said receptacle and the train-pipe, a limiting reducing-valve interposed in said connecting-pipe, a chafing-plate, a connecting device between said chafing-plate and the receptacle, adapted to apply the pressure of the air therein to the chafing-plate, and an escape-valve leading from said receptacle and adapted to permit air to discharge whenever the pressure exceeds a predetermined maximum, substantially as described.

4. In a railway-car, the combination, with the train-pipe of the air-brake, of a receptacle for compressed air, a connecting-pipe between said receptacle and the train-pipe, a limiting reducing-valve interposed in said connecting-pipe, a chafing-plate, a connecting device adapted to apply the pressure of the air in the receptacle to the chafing-plate, an escape-valve adapted to discharge air from the receptacle whenever the pressure therein exceeds a predetermined maximum, and a petcock for discharging the air from said receptacle by hand, substantially as described.

WM. W. GREEN.

Witnesses:
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