Feb. 28, 1928. 1,660,676

L. C. JOSEPHS, JR

RUBBER MOUNTING FOR CAR BODIES

Filed April 6, 1927

Fig. 1.

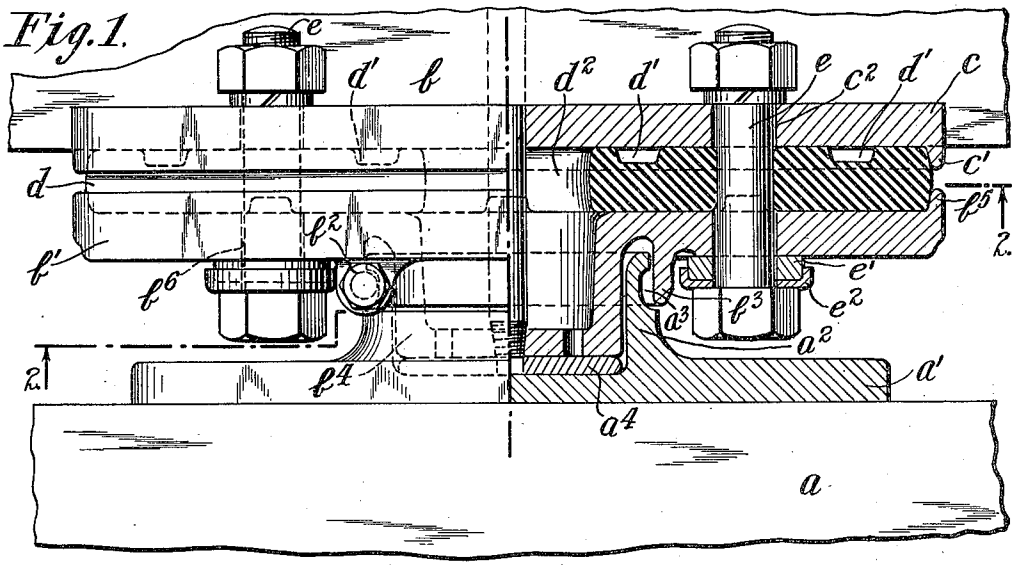
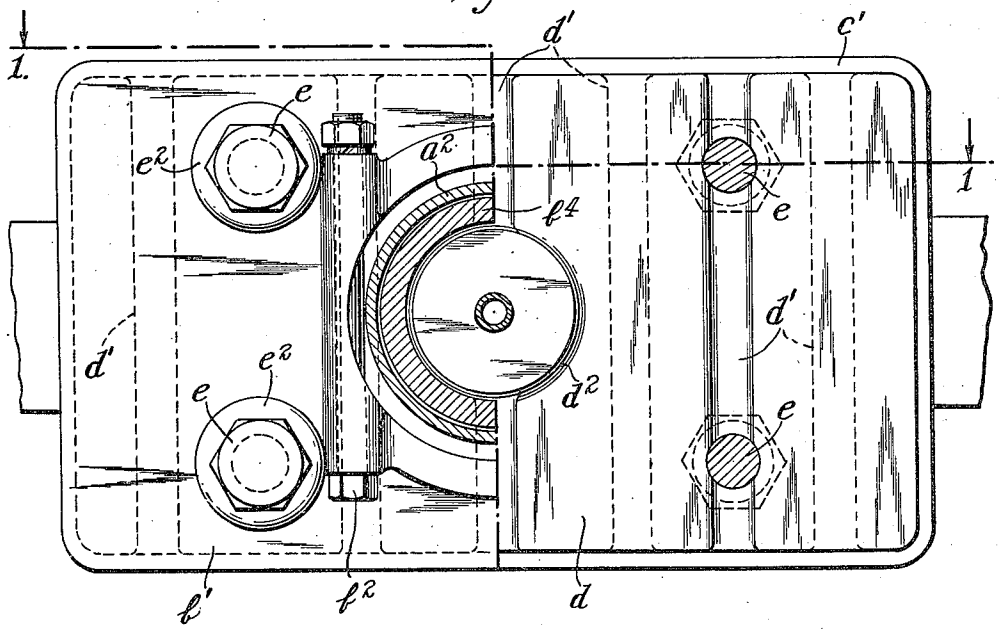


Fig. 2.



Lyman C. Josephs, Jr.
INVENTOR
BY
Redding, Greeley, O'Shea & Campbell
his ATTORNEYS

Patented Feb. 28, 1928. 1,660,676

UNITED STATES PATENT OFFICE.

LYMAN C. JOSEPHS, JR., OF ALLENTOWN, PENNSYLVANIA, ASSIGNOR TO INTERNATIONAL MOTOR COMPANY, OF NEW YORK, N. Y., A CORPORATION OF DELAWARE.

RUBBER MOUNTING FOR CAR BODIES.

Application filed April 6, 1927. Serial No. 181,342.

The present invention relates to rail car designs wherein the car body is carried upon a plurality of trucks in a well known manner and a suitable construction is provided enabling the desired pivotal movement between body and trucks to take place. In designs of this character it is necessary that a connection of a positive nature be provided between these elements so that the stability of the car body will be preserved under all conditions of operation. The danger of excessive sway is apparent, and rough and uneven tracks and curves require constructions which will resist, successfully, the strains which tend to disturb the equilibrium of the car body.

Although the above conditions must be considered, it is also highly desirable to interpose a shock cushioning means between the truck and car body to eliminate the objectionable metallic rail-joint click which is transmitted through the perfect metallic circuit direct from the rail comprising the wheels, journal bearings, truck, bolster, center plate, and car floor. In addition to performing the above function, a cushioning means of this character has other advantages which contribute to improved operation and include the smoothing out of irregularities in acceleration due to differences in application of power between the trucks where there are several driving trucks for each car. This quality also results in smoother operation where several cars are coupled together, since unequal draft forces between the trucks of different cars will be absorbed by the cushioning means.

An object of the present invention is to provide an improved non-metallic and yielding connection between the trucks and car body of a rail car which will serve to absorb deleterious vibrations and shocks and prevent their transmission to the car body, without weakening the connection or impairing its adaptability to service of this character.

A further object is to provide a connection of this type between the bolster and car frame which serves to cushion the car body in the above manner but does not increase the side-sway of the car or disturb its equilibrium at high speeds or on rough road beds.

Other objects of the invention will appear as the description proceeds and reference will now be had to the accompanying drawings for a more detailed description thereof, wherein:

Figure 1 is an elevation, partly in section showing a proposed form of the invention and taken on the line 1—1 of Figure 2.

Figure 2 is a section taken on the line 2—2 of Figure 1 and looking in the direction of the arrows.

Referring particularly to the drawings, a represents the truck bolster and a' the bolster plate having a vertical cylindrical flange a^2. A circumferential groove a^3 extends about the surface of the flange to enable the body bolster plate to be movably secured to the truck bolster plate in a manner to be described later. A bearing plate a^4 is provided in the recess within the flange a^2 and carries the weight of the body upon the truck.

The body bolster is shown at b and the bolster plate at b'. This bolster plate is not integral with respect to the bolster and carries a bolt b^2 which engages the groove a^3 to prevent the two bolster plates from being separated while permitting relative rotary movement therebetween. A cylindrical flange b^3 is formed on the plate b' and bolt b^2 is carried by this flange as shown in Figure 2.

In the center of bolster plate b' a downwardly extending stub shaft b^4 is formed and carries the weight of the body. Bearing plate a^4 receives this member and in this manner, means is provided for turning one element with respect to the other.

A seat c is formed on bolster b and is similar in outline to the bolster plate b' with which it co-operates. At the edges of the seat and bolster plate are formed vertical webs c' and b^5, respectively. These webs prevent excessive jellying of the cushioning element d which is carried between the seat and bolster plate. This cushioning element is composed of rubber or other suitable yielding non-metallic substance and has formed therein spaced grooves d' which are adapted to permit uniform flow of the rubber under load. The cushioning block is formed with a central aperture d^2 to conform to the recessed portion in the stub shaft b^4.

At suitable points in the seat, cushioning element, and bolster plate, aligned apertures c^2, b^6 are formed to receive through bolts e. Thermoid washers e' are provided under the

bolt heads and within seats e^2. These washers eliminate a metal to metal contact between seat and plate since the bolt holes therethrough are oversize with respect to the bolts used.

It will be apparent that when the bolts are tightened the rubber will be placed under compression and the entire structure constitutes a rugged connection having a cushioning effect which absorbs the high frequency low amplitude vibrations and somewhat dampens the heavier shocks to provide a more quiet ride and materially increase the usual life of the car body.

The construction set forth herein is highly effective in preventing "nosing" of the car in rounding a curve, since the connection eliminates to a great extent, the jerking of the car body. Although the invention has been set forth specifically and described as embodied in the drawings, it is not to be limited save as defined in the appended claims.

What I claim is:

1. In a mounting for a car body, a truck, a bolster plate engaging the truck, a vertical web on the bolster plate at its edges to form a seat, a car body, a seat thereon and formed with vertically depending edges, non-metallic yielding cushioning means, and means to secure the bolster plate to the body through the cushioning means whereby the latter is placed under a degree of compression independent of the weight of the car body.

2. In a mounting for a car body, a truck, a bolster plate engaging the truck, a vertical web on the bolster plate at its edges to form a seat, a car body, a seat thereon and formed with vertically depending edges, a block of non-metallic yielding cushioning means formed to be received in the seats, grooves in the block, and means to secure the bolster plate to the body through the cushioning means whereby the latter is placed under compression.

3. In a mounting for a car body, a truck, a bolster plate engaging the truck, a vertical web on the bolster plate at its edges to form a seat, a car body, a seat thereon and formed with vertically depending edges, non-metallic yielding cushioning means, co-operating apertures in the seats and cushioning means, bolts received by the apertures to secure the elements together and place the cushioning means under compression and means associated with the bolts to prevent a metal to metal contact between the bolster plate and car body.

4. In a mounting for a car body, a truck, a bolster plate engaging the truck, a vertical web on the bolster plate at its edges to form a seat, a car body, a seat thereon and formed with vertically depending edges, non-metallic yielding cushioning means, co-operating apertures in the seats and cushioning means, bolts received by the apertures to secure the elements together and place the cushioning means under compression, said bolts being of a size to permit a clearance between apertures of the seats and the respective bolts, and non-metallic washers carried by the bolts to prevent a metal to metal contact between the bolster plate and car body.

5. In a mounting for a car body, a truck, a bolster plate engaging the truck, a vertical web on the bolster plate at its edges to form a seat, a car body, a seat thereon and formed with vertically depending edges, non-metallic yielding cushioning means, co-operating apertures in the seats and cushioning means, bolts received by the apertures to secure the elements together and place the cushioning means under compression, said bolts being of a size to permit a clearance between apertures of the seats and the respective bolts, grooves in the cushioning element to permit the particles thereof to flow when placed under compression, and non-metallic washers carried by the bolts to prevent a metal to metal contact between the bolster plate and car body.

This specification signed this 1st day of April A. D. 1927.

LYMAN C. JOSEPHS, JR.