J. R. CARMER.

BOLSTER CONSTRUCTION FOR RAILWAY CARS.

APPLICATION FILED APR. 4, 1910.

970,303. Patented Sept. 13, 1910.

Fig. 1.

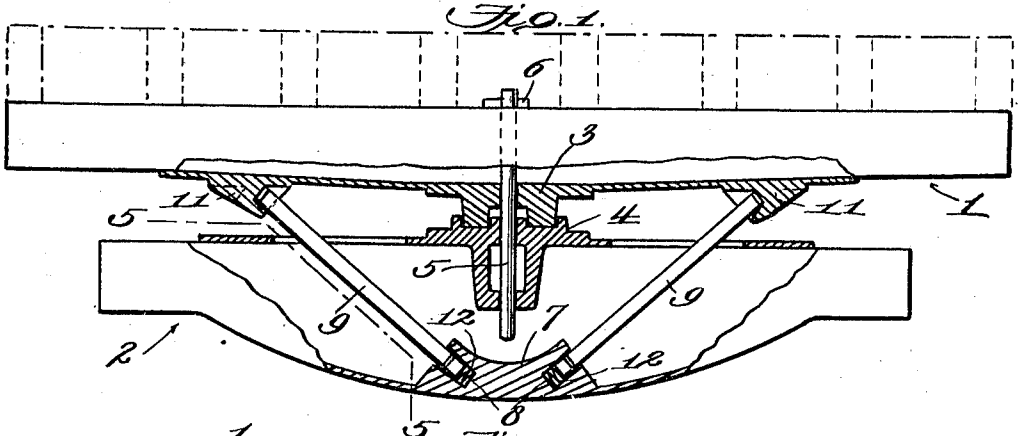


Fig. 2.

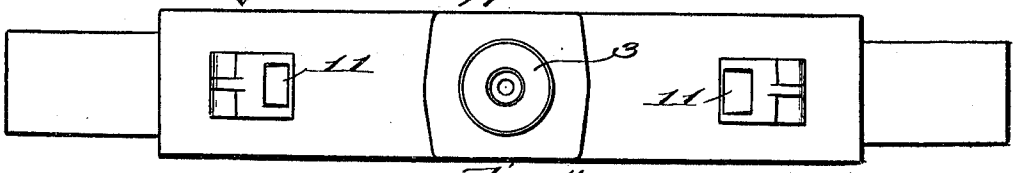


Fig. 4.

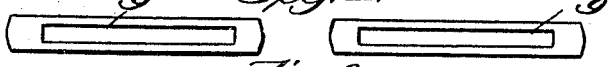


Fig. 3.

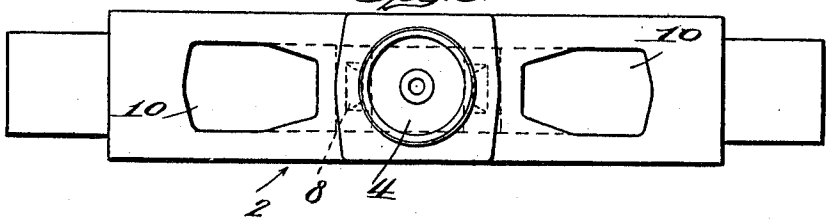
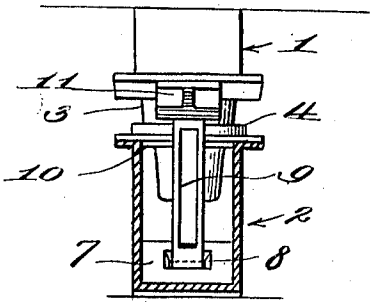


Fig. 5.



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UNITED STATES PATENT OFFICE.

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BOLSTER CONSTRUCTION FOR RAILWAY-CARS.

970,303. Specification of Letters Patent. Patented Sept. 13, 1910.

Application filed April 4, 1910. Serial No. 553,230.

To all whom it may concern:

Be it known that I, JAMES R. CARMER, a citizen of the United States, residing at Wilmington, in the county of Newcastle and State of Delaware, have invented new and useful Improvements in Bolster Construction for Railway-Cars, of which the following is a specification.

The present invention relates to improvements in bolster constructions for railway cars.

It comprehends, generally, a construction wherein the two bolster members are directly connected by a truss bearing, the component parts of which are so arranged that the weight of the car body is sustained centrally of the truck, thereby maintaining the car perfectly balanced, and, at the same time, permitting a free swinging movement of the truck, even though under a very heavy load, when traveling on a curve or tangent.

In certain of the known constructions, it has been proposed to utilize a pair of diagonal braces, constituting in effect a truss, for the purposes specified; this construction is, however, in the forms hitherto employed, extremely faulty, owing to the direct contact of the lower ends of the braces with each other and with the king bolt or its equivalent, since such contact will result, by reason of the pressure exerted upon said braces by the load, not only in excessive wear upon the brace ends and the bolt, due to the friction developed, but also in the movement of the truck being seriously impeded, while the continued torsional strain upon the braces will quickly bend or twist the latter out of shape.

It is the essential object of this invention to produce a diagonal truss bearing so constructed that while all of the advantages of such a bearing are retained, the objectionable friction above referred to is practically wholly overcome, whereby a free swinging movement of the truck at all times is insured.

A structural embodiment of the invention is illustrated in the accompanying drawings, wherein:

Figure 1 is a front elevation of the improved truss and bolster construction, the bolsters being shown partly in section. Fig. 2 is a bottom plan view of the car bolster. Fig. 3 is a top plan view of the truck bolster. Fig. 4 is a plan view of the two truss arms. Fig. 5 is a section on the line 5—5 of Fig. 1.

In said drawings, the upper, or car-carried bolster, and the lower, or truck-carried bolster, are indicated, respectively, in a general manner, by the numerals 1 and 2. Both bolsters are hollow, and the presented walls thereof are provided with suitable centrally-located inter-engaged bearings 3 and 4 formed with registering apertures through which the connecting king-bolt 5 extends, the upper end of said bolt being supported by a key 6 or equivalent device.

Within the interior of the truck bolster 2 and upon the floor thereof, there is provided directly beneath the bearing member 4 a heel or boss 7 having a pair of seats 8 formed therein at diametrically-opposite points. These seats extend inwardly from the side wall of the boss toward the center thereof, and are designed to receive the lower ends of the truss arms 9. Said arms are preferably in the form of flat bars, as shown in Fig. 4; they are arranged diagonally or at an angle to each other, the aforementioned seats 8 being inclined to permit such arrangement, and being also of sufficient width to provide for the necessary pivotal movement of the truss arms due to the movement of the truck.

The roof of the truck bolster is formed with a pair of alining longitudinal slots 10 which are substantially sector-shaped, their smaller ends confronting each other, so as to provide for the play of the truss arms incidental to the turning of the truck. The said arms project through these slots toward the ends of the car bolster and have their upper ends removably received in suitable pockets 11, which, in the present instance, are rigidly connected in any desired manner to the under face of the floor of the bolster, although such arrangement may be modified to suit the particular type of bolster employed. This construction, as will be apparent, insures the support of the ends of the car bolster against sagging.

As above stated, the lower ends of the truss arms are received in the seats 8 in boss 7. These seats may have any desired depth, to retain the arm ends therein, and said ends, as well as the upper ends, are preferably slightly rounded, so as to reduce friction as far as possible. It is deemed advisable, although not strictly essential, to

interpose expansible coil springs or the like in said seats between the bottom walls of the latter and the adjacent ends of the truss arms. These springs or their equivalents, when employed, serve to force the arms outwardly of their seats and thus maintain the upper ends thereof in place in the pockets 11. They further constitute cushions, as will be apparent. The construction just described is illustrated in Fig. 1, wherein the springs are indicated by the numeral 12.

The employment of the truss, and the above described arrangement of its component parts, have the obvious effect of supporting and sustaining the car body centrally of the truck, and, in consequence, of perfectly balancing the car. Also, as a further result, friction between the moving parts is reduced to a minimum. This is due primarily to the fact that the convergent lower ends of the truss bars or arms are pivotally supported upon the boss at points remote from each other and hence have no mutual contact whatever. The rounded formation of the ends of said arms is also conducive to the same result which is materially furthered by the interposition of the spring cushions in the boss seats. At the same time, displacement of the arm ends is prevented by their reception in said seats and in the pockets of the car bolster, whereby the efficiency of the device is insured. In like manner, it will be observed that the truss arms are free from contact with the king-bolt, thus precluding the wear and possible injury which would result if such contact were present. Finally, the ready assembling and disassembling of the truss arms is provided for, by reason of the removable fit of their upper ends in the pockets 11, and of their lower ends in the seats 8.

I claim as my invention:

1. The combination, with the operatively-associated superposed car and truck bolsters; of a truss connecting said bolsters and comprising a pair of separate diagonally-arranged members; means rigidly connected to the central portion of the truck bolster and having the convergent ends of the truss members pivotally supported thereupon at points remote from each other; and retaining devices rigidly connected to the car bolster adjacent the ends of the latter and engaged with the divergent ends of said truss members whereby the ends of said car bolster are supported against sagging.

2. The combination, with the operatively-associated superposed car and truck bolsters; of a truss connecting said bolsters and comprising a pair of separate diagonally-arranged members; a boss rigidly connected to the central portion of the truck bolster and formed with diametrically-opposite seats wherein the convergent ends of the truss members are supported for rocking movement; and retaining devices rigidly connected to the car bolster adjacent the ends of the latter and engaged with the divergent ends of said truss members, whereby the ends of said car bolster are supported against sagging.

3. The combination, with the operatively-associated superposed car and truck bolsters; of a truss connecting said bolsters and comprising a pair of separate bars arranged at an angle to each other; pockets rigidly connected to the car bolster adjacent the ends of the latter and having the divergent upper ends of said bars fitted therein whereby the ends of said car bolster are supported against sagging; and a boss rigidly connected to the central portion of the truck bolster and having the convergent lower ends of said bars pivotally supported thereon at points remote from each other, both ends of said bars being rounded to reduce friction at their points of contact with said pockets and boss.

4. The combination, with the operatively-associated superposed car and truck bolsters; of a truss connecting said bolsters and comprising a pair of separate diagonally-arranged members; retaining devices rigidly connected to the car bolster adjacent the ends of the latter and engaged with the divergent ends of the truss members whereby the ends of said car bolster are supported against sagging; a boss provided upon the central portion of the truck bolster and formed with diametrically-opposite seats wherein the lower ends of said members are pivotally received; and means interposed in said seats between the bottom walls thereof and said ends for cushioning said members.

5. The combination with the operatively-associated superposed car and truck bolsters; of an angle-truss connecting said bolsters and comprising a pair of separate members; a boss provided upon the truck bolster and formed with a pair of diametrically-opposite seats wherein the divergent lower ends of the truss members are removably inserted; and a pair of pockets provided upon the car bolster adjacent the end of the latter and having the convergent upper ends of said members removably fitted therein, whereby the ends of said car bolster are supported against sagging.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JAMES R. CARMER.

Witnesses:
ALTON C. PYLE,
W. C. DRAPER.