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P. R. DRENNING

BOLSTER FOR RAILWAY CARS

Filed March 22, 1926

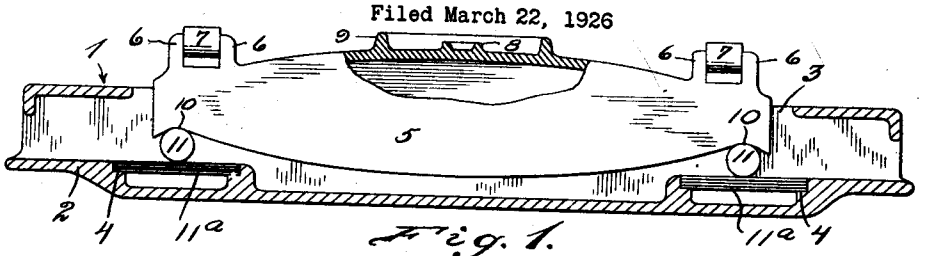


Fig. 1.

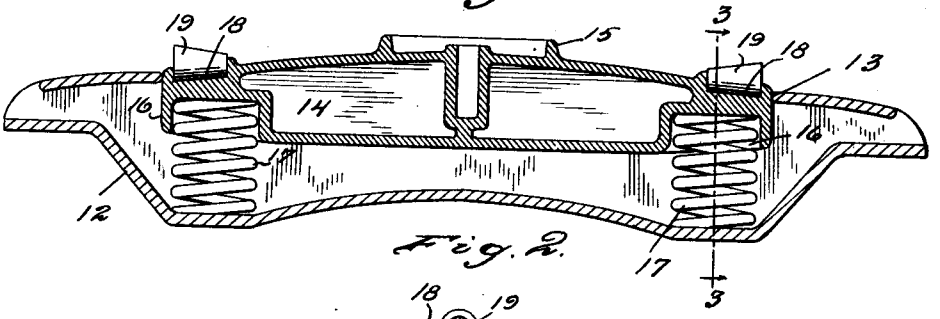


Fig. 2.

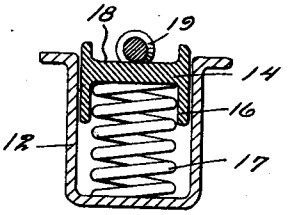


Fig. 3.

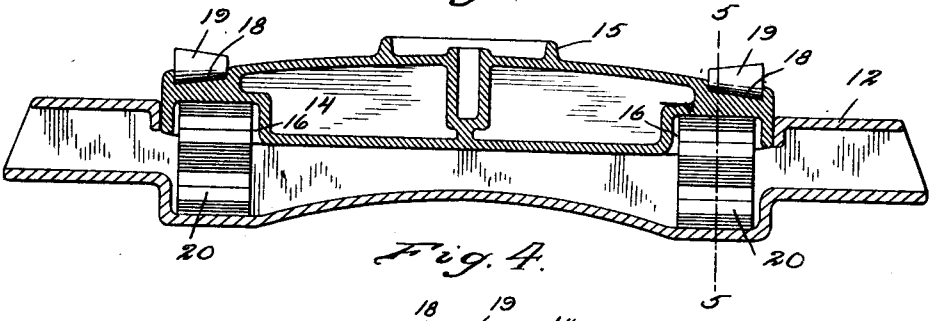


Fig. 4.

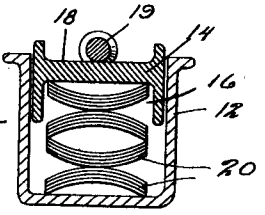


Fig. 5.

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UNITED STATES PATENT OFFICE.

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BOLSTER FOR RAILWAY CARS.

Application filed March 22, 1926. Serial No. 96,634.

The invention relates to bolsters for railway car trucks.

The object of the invention, generally stated, is to provide a bolster including a main or outer member conforming to the standard dimensions and shape of the usual type of bolster and containing or including an inner member mounted for movement with respect to the outer member either longitudinally thereof or vertically or both with respect thereto, as the case may be.

An important object is to provide a bolster in which the inner member is in contact with the car body, and is movably mounted with respect to the outer member so as to equalize the strains incident to car movement.

Another object of the invention is to provide a bolster in which the inner member may have longitudinal movement with respect to the outer member as is a recognized advantage under certain circumstances.

A still further object of the invention is to provide a bolster of this character in which the inner member is resiliently supported with respect to the outer member, irrespective of any cushioning devices which may be used, as is customary, between the latter and the side frames, the said outer or main member and the inner member being adapted, in so far as size and shape are concerned, to replace the present rigid standard or conventional bolster.

An additional object of the invention is to provide a composite or two-part bolster of this nature in which the means for supporting the inner member may be any one or a combination of a number of forms, depending upon the particular nature of the car to be equipped with the device, the character of the service and the estimated strain to be placed upon the structure.

To the attainment of the foregoing and other objects and advantages the invention consists in the detailed construction and the arrangement and combination of parts to be hereinafter more fully described and claimed and illustrated in the accompanying drawings in which:

Figure 1 is a longitudinal section through a bolster constructed in accordance with one form of the invention, this view illustrating the use of lateral motion rollers,

Figure 2 is a longitudinal section through a modified form of bolster in which the inner member is spring supported and incapable of longitudinal movement,

Figure 3 is a cross section taken on the line 3—3 of Figure 2,

Figure 4 is a longitudinal section through another form of the invention showing the use of leaf springs, and

Figure 5 is a cross section on the line 5—5 of Figure 4.

Referring more particularly to the drawings and especially to Figure 1, I have shown a bolster designated generally by the numeral 1 and including a main body or outer member 2 preferably constructed to conform to the shape, dimensions and other requirements of a standard bolster, the intention being that the present device be capable of use in connection with ordinary and already existing truck side frames and other car parts without necessitating any changes in the construction or arangement thereof. The exact details of the construction of this outer member are more or less immaterial especially as many variations may be made depending upon the particular make or type of trucks with which the device may be used. Generally speaking, this outer member 2 may be said to be of hollow formation and provided at its top with an opening 3 and at its bottom with pockets 4 located somewhat near the ends.

The device further includes an inner member or auxiliary bolster element 5 which may likewise be of any desired specific form and located within the hollow body member 2 at the opening 3. This inner member 5 is represented as equipped near or at its ends with upstanding bracket members 6 arranged in pairs and between which are journaled side bearings formed as rollers 7. If preferred, the inner bolster may be provided at this point with a flat bearing surface for the support of any existing form of friction or anti-friction side bearing. At its center the member 5 is provided with a center bearing including a central projection 8 surrounded by a cir-

cular flange 9 both of which cooperate with the car body bolster center plate, not shown. At or near its ends the inner member 5 is provided at its underside with seats or bearing surfaces 10 arranged opposite to and above the seats or bearing surfaces 4, and located at these points and bearing against these bearing surfaces or seats are suitable rollers 11. The opening 3 in the top of the main or body member is of greater length than the inner member 5 so that the latter may have longitudinal movement with respect to the former, as may be found desirable in certain circumstances or under various conditions. It is of course desirable that the surface 10 be of such shape that there will always be a tendency for the inner member 5 to center itself with respect to the main or body member whenever lateral strain is relieved, the device being consequently self-centering while having the possibility of lateral motion. Within the pockets 4 are mounted leaf springs 11ª supported at their ends and constituting bearings for the rollers 11 engaging against the cam-like surfaces 10 at the bottom of the inner bolster member 5, these springs being preferably flush with the top surface of the bottom portion of the bolster. The leaf springs will operate to take up shocks, jars and vibrations, as will be readily apparent. Inasmuch as the springs flex downwardly under strain there will always be a tendency for the roller to center itself when a lateral surging tendency has ceased.

In certain types of cars it is not necessary for the inner member to be longitudinally movable with respect to the main or body member and in Figures 2 to 5 inclusive I have shown modifications in which cushioning means is provided for the inner member but in which the inner member is incapable of any movement other than vertical. Various modifications and expedients may be resorted to and in Figures 2 and 3 I have shown the bolster as comprising an outer or main member 12 of hollow formation and having its top provided with an opening 13 within which is located the inner member 14 having a center bearing structure 15. Owing to the absence of longitudinal movement there is no necessity for the employment of rollers as in the first described form, but the end portions of the inner member 14 are provided with pockets or other abutment elements 16 engaged by coil springs 17 which rest upon the top surface of the bottom of the main or body member 12, these springs acting to support the load and to provide resilience irrespective of that provided by the usual springs located within the window openings of the truck with which the device is used or in which it may be embodied. Near its ends the member 14 is provided at its upper surface with suitable recesses or other bearing elements or portions 18 within which are located side bearing rollers 19 which might, of course, be cylindrical in shape as disclosed in Figure 1 or which may be tapered or frusto-conical as illustrated in Figures 2 and 3.

In Figures 4 and 5 the construction is the same except that groups of leaf or plate springs 20 are provided in lieu of the helical springs 17 above described, the other features being the same and the operation being likewise the same as is the case with the form disclosed in Figures 2 and 3.

In all forms of the invention the operation is substantially the same and it will be observed that the inner member is movable either longitudinally or vertically, or both, with respect to the outer member so as to accomplish the desired results.

While I have shown and described various embodiments of the invention, it should be understood that the disclosure is merely illustrative as the right is reserved to make all such changes in the form, construction and arrangement of parts as will not depart from the spirit of the invention or the scope of the claims hereunto appended.

Having thus described the invention, I claim:

1. In a railway car truck bolster, a main or body member adapted to replace a standard bolster and provided with an opening, and an inner member located within said opening and vertically movable with respect to the outer member, said inner member carrying a center bearing and side bearings, and spring means located beneath the side bearings for opposing downward movement of the inner member.

2. In a railway car truck bolster, a main or body member adapted to replace a standard bolster and provided with an opening, an inner member located within said opening and movable vertically and longitudinally with respect to the outer member, said inner member carrying a center bearing and side bearings, and springs located beneath the side bearings for opposing downward movement of the inner member.

3. In a railway car truck bolster, an elongated hollow body conforming to a standard bolster and provided in its top with a longitudinally extending opening, an inner member located within said opening and provided with center and side bearings, and spring members located between and abutting against said main and inner members at points beneath the side bearings for providing resilience.

4. In a railway car truck bolster, an elongated body member adapted to be mounted within the window openings of the side frames of a car truck and formed in its top with an opening, a member located within

the opening, rollers permitting movement of the inner member longitudinally with respect to the main member, and spring means beneath the rollers for opposing such movement.

5. In a railway car truck bolster, a main hollow body adapted to replace a standard bolster and provided in its top with an opening, an inner member of less length than said opening located therewithin and capable of movement longitudinally with respect to the main member, the underside of said inner member being provided near its ends with curved bearing surfaces, the bottom of the main member being provided with recesses beneath the end portions of the inner member, a bank of plate springs located within each of said recesses, and rollers engaged between said bearing surfaces and the banks of springs.

6. In a railway car truck bolster, a main member having an opening in its top, an inner member mounted for vertical and longitudinal movement with in said opening, rollers located beneath the ends of the inner member, and banks of plate springs located beneath said rollers.

7. In a railway car truck bolster, a main member having an opening in its top, an inner member movable vertically and longitudinally within said opening, rollers supporting the ends of the inner member, the main member having pockets, and banks of plate springs located within said pockets and upon which said rollers rest.

8. In a railway car truck bolster, a main member having an opening in its top, an inner member movable vertically and longitudinally within said opening, rollers supporting the ends of the inner member, the main member having pockets, and banks of plate springs located within said pockets and upon which said rollers rest, the tops of the banks of springs being flush with the top surface of the bottom portion of the bolster.

In testimony whereof I affix my signature.

PERCY R. DRENNING.