J. M. ROHLFING.

BOLSTER.

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1,066,534.

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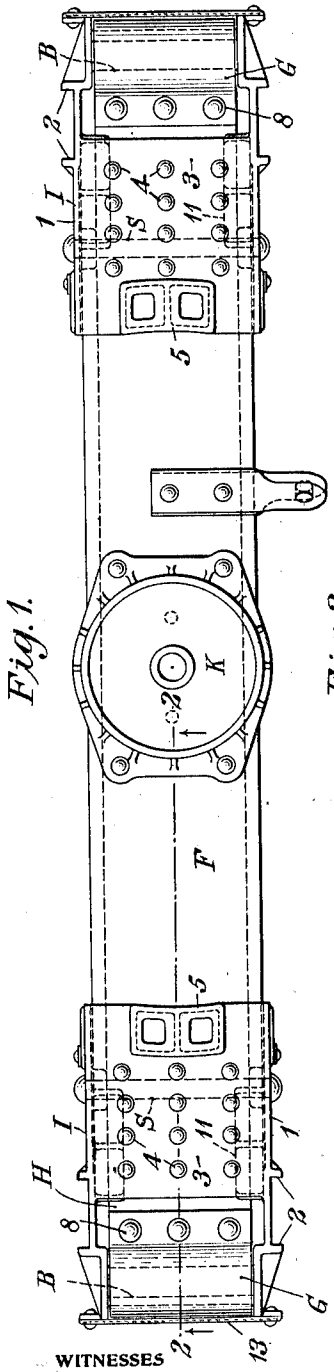


Fig. 1.

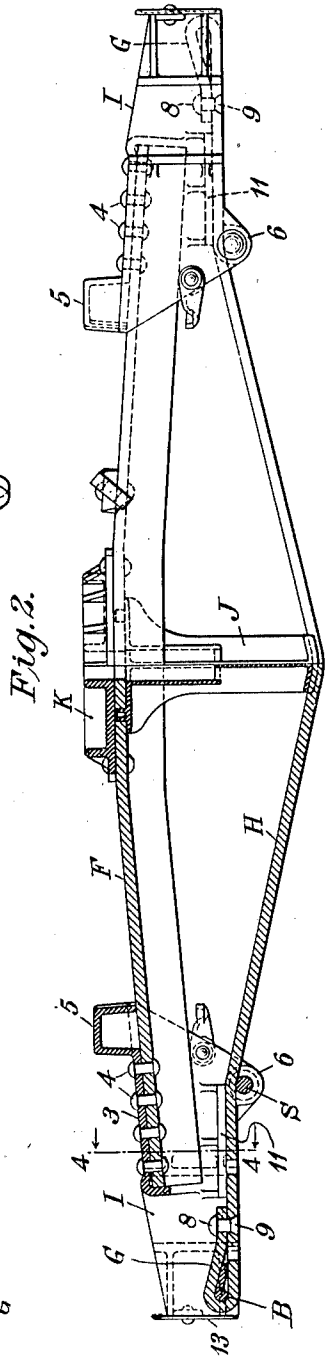


Fig. 2.

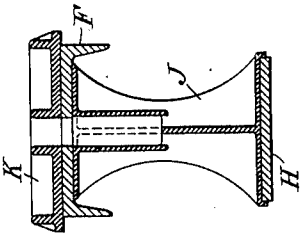


Fig. 3.

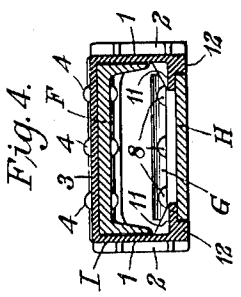


Fig. 4.

WITNESSES

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BOLSTER.

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To all whom it may concern:

Be it known that I, JOHN M. ROHLFING, residing at St. Louis, Missouri, and being a citizen of the United States, have invented certain new and useful Improvements in Bolsters, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and to use the same, reference being had to the accompanying drawings, which illustrate the preferred form of the invention, though it is to be understood that the invention is not limited to the exact details of construction shown and described, as it is obvious that various modifications thereof will occur to persons skilled in the art.

In said drawings:—Figure 1 is a plan view of the improved bolster. Fig. 2 is a composite view showing at the right an elevation, and at the left a central longitudinal sectional view, the section being taken on the line 2—2 of Fig. 1. Fig. 3 is a central vertical transverse section, and Fig. 4 is a vertical transverse sectional view taken through one end of the truss and taken on a plane indicated by the line 4—4 of Fig. 2, looking in the direction of the arrow.

While the invention will be described with some detail with reference to its application as a car bolster, it is to be understood that the device may be modified or reconstructed by those skilled in the art to adopt the inventive features of the same for use in other truss members, as, for instance, in a car brake beam or sill, and may be even utilized in devices entirely foreign to the car art.

The physical embodiment of the invention herein disclosed comprises a short compression member preferably formed of a commercially rolled channel with its flanges depending, a longer plate tension member, a strut and extension pieces or head blocks serving as thrust blocks for the compression member and anchor for the tension member.

The object of the invention is to provide means whereby the strain upon the extension pieces or anchors, resulting from the pull on the tension member, shall be distributed over two or more portions of the anchor and permitting a more equable distribution of the metal. This is accomplished by looping the ends of the tension member about a cross bar at the outer end of the anchor and resting the intermediate portions of the tension member upon retaining pins supported in the downwardly projecting perforated ears on the anchor. By this arrangement, the cross-bar about which the tension plate is looped is relieved of the direct pull of the tension member and may thus be of a section smaller than would be the case where the tension member was directly connected to the cross-bar and had no intermediate support to break the force of the load.

The change in the magnitude and direction of the forces acting upon the end anchor is an important result of the arrangement shown, the idea being to break the resultant force of the load in the tension bar and divide it into component forces acting horizontally upon the cross-bar and vertically upon the retaining pieces.

Referring to the parts, F is the compression member of the improved bolster, which compression member is shown as of channel form and is preferably a commercially rolled channel section of less length than the complete bolster.

H is the tension member which is preferably formed of plate metal looped at its ends with return portions G held in suitable head blocks or end anchors in the form of pressings, forgings or castings I at each end by means of pins B—B suitably anchored in said castings and retaining pins S, which extend through downwardly extending ears formed on the head block castings. The head block castings are preferably hollow, forming a boxing in cross-section, as shown in Fig. 4, and comprise the side walls 1, which are provided with outwardly extending flanges 2—2 to form column guides, and have a cross connecting web or cap 3, beneath which extends the compression member F, which compression member is secured to said cap by through rivets 4 passing through the web of the caps and through the web of said compression member. As shown, the head castings are provided with an integral side bearing 5 formed as a part of said castings, though it is evident that the cap 3 may be extended inwardly, if desired, and any form of side bearing supported thereupon. The side walls of the casting are continued downwardly below the plane of the horizontal portion of the tension member H and ter-

minate in ears 6, which are perforated for the passage of the retaining pins S, upon which rest said tension member H. As will be seen in Fig. 2, said tension member is looped at its ends, and the return portion which overlaps is secured by through rivets 8, which rivets have counter-sunk heads 9 at their lower sides, so that the extension of the tension member from the retaining pins S outwardly to the locking members B is flat and substantially horizontal when the bolster is in position, thus permitting said tension member to rest directly upon the usual supporting springs or, if desired, upon spring caps resting upon said spring.

In this class of bolsters it has been customary to provide head castings adapted to receive the tension and compression members, but said head castings have generally been provided with horizontal flat faces to receive spring caps, while in this device the springs may bear directly on the tension member, if desired, thereby permitting the use of longer springs on the trucks and eliminating the bulky extensions on the head blocks of the old structures. Between the pins B and S the head castings are provided with inwardly projecting shoulders 11, under which extends the ends of the tension member H, thereby insuring positive engagement of the tension member with said casting. By this construction it will be noted that the tension member is held immovably in position, in that the inwardly projecting shoulders 11 on the casting I overlap and thereby prevent upward movement of the horizontal portion of the tension member H, the removable retaining pin S prevents downward movement and the thickened portion 12 of the walls 1 beneath the shoulders prevents lateral movement of this portion of the tension member H. The ends of the side walls 1 are connected by cover plate 13, which may be utilized as a name plate. The compression member F and tension member H are spaced at their central portion by a conventional form of strut J, disposed in vertical alinement with and co-acting with the same is a bearing plate K.

What I claim is:

1. In a car bolster, a compression member, a tension member having an intermediate portion spaced from said compression member and having end portions extending beyond and disposed substantially parallel to said compression member, and open bottom head blocks disposed between the adjacent ends of said compression and tension members, said head blocks and tension member constituting the bottom of said bolster.

2. In a car bolster, a compression member, an open bottom casting fitting an end thereof and extending for a material distance beyond the same, and a tension member forming part of the bottom of said casting.

3. A truss comprising a compression member including head blocks at each end forming extensions thereof, and a flat horizontally disposed portion of a tension member including extensions from each end constituting the outer lower face at each end of said truss.

4. In a car bolster, a flat horizontally disposed portion of a tension member constituting the outer lower face of each end of said bolster, a compression member, and head blocks and removable retaining pins fastening said portion of the tension to said compression member.

5. In a car bolster, a tension member having a horizontal end portion, an end casting disposed above said portion, a pin carried by said casting, said tension member being overlapped about said pin to form an uninterrupted undersurface to said horizontal end portion.

6. In a car bolster, a compression member, a tension member, an end casting connecting adjacent ends of said members, said casting containing an end of said compression member and disposed entirely above the bottom of the end portion of said tension member.

7. In a car bolster, a compression member, an end casting affixed thereto, a pair of transversely extending pins carried by said casting, a tension member overlapping the outer of said pins and supported by the other of said pins.

8. In a car bolster, a compression element, an end casting, two spaced apart members carried by said casting, a tension element overlapping one of said members and fastened to the other of said members, the part of the tension element between said member being at an angle to the part to the inside of the inner of the members, whereby tensile strains will be transmitted to said casting horizontally and vertically.

9. In a car bolster, an end casting, a pair of transversely disposed spaced apart pins at the lower portion of said casting, a tension member overlying the inner of said pins and overlapping the outer of said pins, thereby forming an uninterrupted under surface for said bolster outward of said inner pin.

10. In a truss bolster, a compression member, an end casting extending beyond and below the end of said member, said casting comprising spaced vertical walls, an inwardly projecting shoulder from each wall co-acting to form a stop adapted to overlap the tension member of the bolster to prevent upward movement of said member, and a removable pin carried by the casting adapted to maintain the tension member in engagement with said shoulders.

11. An open bottom end casting for truss structures, comprising spaced side walls and a top cross web connecting said walls, a face plate connecting the ends of said walls, and a plurality of pins disposed between said walls.

12. An open bottom end casting for truss bolster structures, comprising spaced side walls and a top cross web connecting said walls, a face plate connecting the ends of said walls, a plurality of pins disposed between said walls, and a side bearing integral with said cross web.

13. In a truss, a compression member, a cross bar and a retaining piece supported from said compression member, and a tension member acting vertically upon said retaining piece and horizontally upon said cross bar.

14. In a truss, a substantially straight channel compression member having a web portion transversely of the line of stress, a tension member materially longer than the compression member and spaced therefrom at all points thereof, an end anchor having means maintaining the adjacent ends of said members in position substantially parallel to each other, and a central strut of greater depth than said anchor disposed between said compression and tension member.

15. In combination with an open bottom head block for truss members comprising spaced side walls and a top plate adapted to be fastened to a compression member, a tension member, and means for supporting said tension member between said walls, said tension member forming a bottom closing plate for said block.

16. The combination of an open sided boxing forming an end anchor for truss beams, a compression member held within said boxing, and a tension member closing the open side of said boxing.

17. In a truss bolster, a compression member, a tension member spaced therefrom, a head block connecting adjacent ends of said members, and a side bearing integral with said block.

18. A truss bolster, comprising a tension member, a compression channel, center and side bearings carried by said channel, an anchor block constituting part of one of said side bearings adapted to connect said channel with said tension member.

19. In a truss, a stress member, a second stress member extending beyond opposite ends of and spaced from said first mentioned member, and a hollow connecting means having walls engaging an end and adjacent sides of each of said members.

20. A truss anchor, including parallel side walls, a top web connecting said side walls, a removable retaining member, a stress member fastened to said top plate, a second stress member positioned between said parallel walls and extending beneath and on opposite sides of said top wall and held in position by said retaining member.

21. An open bottom truss anchor comprising parallel sides, a top wall and a retaining flange projecting inwardly from each of said side walls.

22. A truss anchor, including spaced apart side walls and a pair of pins disposed between said walls, one of said pins adapted to fasten a stress member to said anchor, and the other pin adapted to coact with a strut to maintain said stress member in a bent position.

23. An open end truss anchor including a top and side walls, means carried thereby adapted to fasten stress members within said anchor, and an end plate connecting the outer ends of said side walls.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

JOHN M. ROHLFING.

Witnesses:
A. MENDEZ,
JAMES J. COOPER.