No. 736,094. PATENTED AUG. 11, 1903.

J. M. HANSEN.

TRUCK BOLSTER FOR RAILWAY CARS.

APPLICATION FILED JAN. 9, 1902.

NO MODEL.

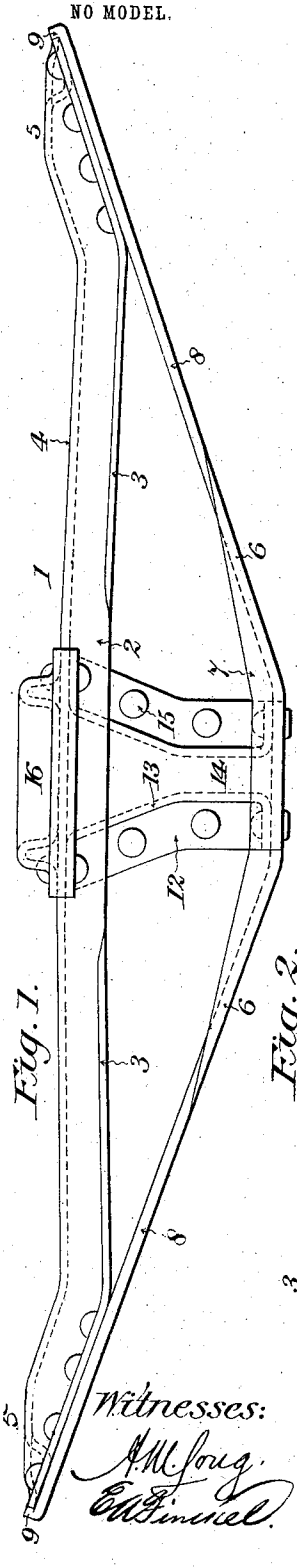

Fig. 1.

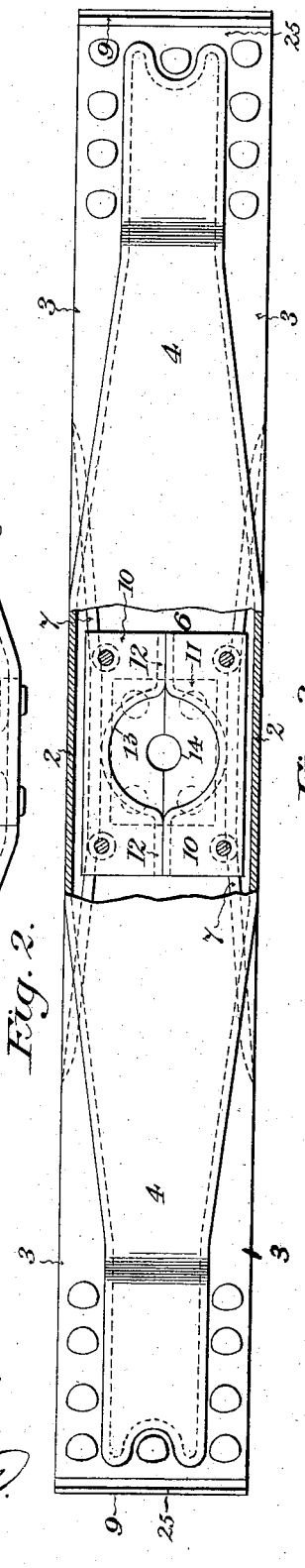

Fig. 2.

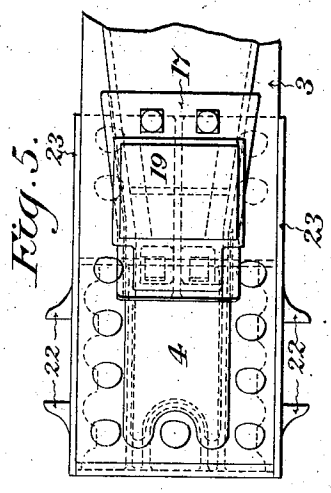

Fig. 5.

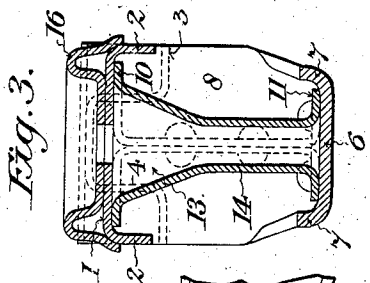

Fig. 3.

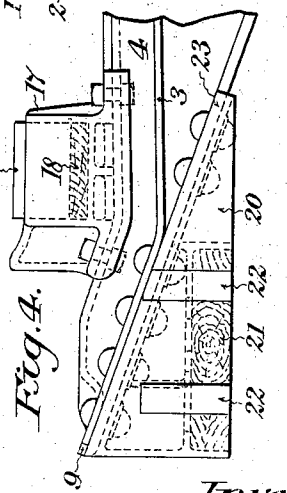

Fig. 4.

Witnesses:
A. M. Young.
E. W. Finnell.

Inventor:
John M. Hansen
by Wm. W. Finnell
Atty.

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UNITED STATES PATENT OFFICE.

JOHN M. HANSEN, OF PITTSBURG, PENNSYLVANIA.

TRUCK-BOLSTER FOR RAILWAY-CARS.

SPECIFICATION forming part of Letters Patent No. 736,094, dated August 11, 1903.

Application filed January 9, 1902. Serial No. 89,059. (No model.)

To all whom it may concern:

Be it known that I, JOHN M. HANSEN, a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a certain new and useful Improvement in Truck-Bolsters for Railway-Cars, of which the following is a full, clear, and exact description.

This invention relates to pressed-steel bolsters for railway-car trucks.

The object of the invention is to provide a bolster having the characteristics of a truss and embodying lightness with great strength and durability.

In carrying out the invention I use a top or compression member having longitudinal vertical side flanges at its center and horizontal flanges thence to its ends and a longitudinal channel or embossment extending substantially its full length and a bottom or tension member also having central vertical flanges and flat ends and a central tubular brace of novel construction. Also in connection with the bolster are peculiarly-constructed side bearings and top spring plates or seats.

In the accompanying drawings, illustrating my invention, in the several figures of which like parts are similarly designated, Figure 1 is a side elevation, the side bearings and spring-seats being omitted. Fig. 2 is a top plan view with the compression member broken away to expose the center brace. Fig. 3 is a central vertical cross-section. Fig. 4 is a side elevation of one end of the bolster, showing the side bearing and spring seat or plate in position. Fig. 5 is a top plan view of the parts shown in Fig. 4.

The top or compression member 1 is made of inverted trough shape at its central portion, as shown in Fig. 3, or, in other words, has the downwardly-turned edge or side flanges 2, and at opposite ends of this central portion there are horizontal flanges 3, extending to the opposite ends of said member, and a central longitudinal embossment 4, extending substantially the length of the compression member to stiffen it and increase its strength, the said embossment running out to nothing at the ends 5 and the ends being bent up. Thus the compression member is channeled. The tension member 6 has the central upturned edge or side flanges 7, as shown more particularly in Figs. 1 and 3, and these edge flanges run out to nothing on opposite sides of the center, and thence the said tension member has the flat ends 8, which are parallel with the upturned ends of the compression member, and the two are secured together by rivets or otherwise, as may be desired. The ends of the compression and tension members may be coterminous or the ends of the tension member may be provided with upturned lips 9 to form end abutments for the compression member.

Interposed between the compression member and the tension member is a tubular columnar member constituting a strut or central brace and composed of complemental halves, each of which has a top flange 10, a bottom flange 11, and opposite side flanges 12 with a flaring portion 13 and a semicylindrical portion 14, so that when two such parts are placed side by side with their flanges 12 parallel and these flanges are united, as by rivets 15, the tubular structure or column is formed, and this tubular column is united by its top flanges to the compression member and by its bottom flanges to the tension member, as by rivets. The same rivets that secure the compression member and brace in place may also be used to secure the center bearing-plate 16, or said center bearing-plate may be otherwise secured in place.

All of the parts described may be of pressed steel, although I do not limit my invention to the use of that form of metal.

In Figs. 1 and 2 I have purposely shown the bolster itself without showing those usual adjuncts supplied with it, and since, as will be perfectly clear, the bolts or rivets which are used to apply the top spring plate or seat to the ends of the bolster may also be used to unite the ends of the compression and tension members I have simply indicated the location of such bolts or rivets in Figs. 1 and 2 by showing their heads only, the preferred construction in this particular being illustrated in detail in Figs. 4 and 5.

In Figs. 4 and 5 I have shown a preferred form of side bearing, wherein 17 is a pocket made as a casting, malleable or otherwise, or made of pressed steel and adapted to be bolted to the compression member and in which is arranged a wooden cushion-block 18

to support a metal shoe 19, which projects up above the top level of the pocket. This shoe may be of cast-iron or other material. By varying the thickness of the cushion-block the side-bearing clearance can be adjusted to any desired height.

Also in Figs. 4 and 5 I have shown a preferred form of top spring plate or seat 20. This plate or seat may be of cast metal or pressed steel, and it is provided with a pocket on its under side to receive a wooden cushion-block 21, the thickness of which may be varied to permit the bolster to be used under different cars and under different conditions. This plate or seat may be provided with pairs of laterally-projecting lugs 22 for the bolster-column guides. As shown, this plate or seat has edge flanges 23 to embrace the edges of the tension member, and, as already indicated, the rivets or bolts used to unite the ends of the compression and tension members may also be used to fasten the plates or seats to the bolster. The plate or seat 20 serves to stiffen the ends of the bolster in case a heavy load should be applied to the side bearings, and it also acts as a chafing-plate and end stop for the bolster. The lugs 22 may or may not be used, in accordance with whether or not the bolster is used in a truck having column posts or not.

Referring again to the compression member, it will be observed that the flanges 2 extending downwardly form a channel at the center with a straight flat top the full width of the bolster to receive the center plate, thereby securing a maximum resistance to end shocks. This channel is, as shown in Fig. 2, gradually tapered on converging lines, with the edges turned out horizontally, as at 3, to afford facilities for riveting to the tension member. The channel or embossment is stopped entirely before reaching the end of the plate in the preferred construction, so that flat flanges 25 are also formed at the ends. An advantage in having this compression member flat around its edges and at the ends is that it may be sheared to any desired gage after being pressed.

Referring again to the tension member, it is to be noted that the upward flanging of the central portion serves to contract the width thereof and thereby enables the bolster to come in between the flanges of the transoms or angles running from side to side of the truck-frame. In case the ends of this tension member be turned up, as at 9, the lips thereby formed afford stops for the compression member should the rivets be found insufficient to resist the forces tending to separate the two members.

Referring to the columnar-brace, it is to be noted that the circular formation is such as to constitute a good support for the center plate at the top, while the diameter of the cylindrical portion is contracted, so as to form a guide for the king-pin.

A bolster constructed in accordance with this present invention, as already indicated, may be made very light and yet possess great strength because of the reinforcing portions being located where most needed. Owing to the fact that the center at the bottom is made narrow the bolster may be of great depth and thereby the maximum strength secured. The manner of flanging the compression and tension members admits of the use of a large number of rivets and of their being placed so that they can be driven by power, thus effecting a considerable saving in cost as compared with hand-riveting.

While I have shown the compression member as provided with downwardly-projecting central flanges, I may use upwardly-projecting flanges, and so also the projection of the tension-member flanges may be reversed. Moreover, the compression member may be combined with a different form of tension member and the tension member be combined with a different form of compression member within the scope of this invention. Also within the scope of this invention is the provision of straight instead of upturned ends.

What I claim is—

1. A bolster having a compression member provided with vertical flanges at its center, laterally-projecting flanges extending on both sides toward the ends of the bolster and coinciding at their inner ends with the ends of said central flanges, and a longitudinal channel or embossment.

2. A bolster having a compression member provided with vertical flanges at its center, laterally-projecting flanges extending over said central portion outwardly to each end and increasing in width, and a longitudinal channel or embossment, the sides of the channel or embossment converging toward the ends.

3. A compression member for bolsters having central vertical flanges, horizontal end flanges decreasing in width toward the middle of the bolster, and a longitudinal channel tapered from the center toward each end whereby a uniform width throughout the compression member may be maintained.

4. A bolster having a compression member channeled longitudinally with central downturned vertical flanges and horizontal flanges 3 and 25, the flanges 25 being formed at the ends of the member and in or approximately in the planes of the flanges 3.

5. A bolster, having in combination with a compression member a tension member, provided with a narrow central portion constructed with vertical flanges and substantially flat or plain ends.

6. A bolster having in combination a tension member upwardly inclined from its middle portion and having flat or plain portions at its ends, a compression member having its ends bent parallel to the tension member and provided with flat or plain portions seating on the corresponding portions of the tension

member, and spring-seats having inclined or beveled faces seating on the flattened portions of the tension member, said parts being riveted together by the same rivets, substantially as set forth.

7. A bolster having in combination a channel-shaped compression member provided with upper inclined flat portions at its ends, and a tension member having a narrow central portion, and its end portions flat or plain and riveted to the flat portions of the compression member.

8. A bolster having in combination a compression member having upturned ends provided with seats on their under sides, and a tension member having its central portion flanged and of less width than the compression member, and outwardly-inclined flat ends riveted to the upturned ends of the compression member, substantially as set forth.

9. A bolster, having a compression member, and a tension member, combined with a columnar brace composed of semicircular halves riveted together and spread out at the top, and having a cylindrical lower portion to receive the king-pin.

10. A bolster, comprising a channeled compression member, with central vertical flanges and lateral end flanges and upturned ends, and a tension member having central vertical flanges and flat ends, the ends of the compression and tension members being riveted together.

11. A bolster, comprising a channeled compression member, with central vertical flanges and horizontal end flanges and upturned ends, and a tension member having central vertical flanges and flat ends, the ends of the compression and tension members being riveted together, and a central columnar brace interposed between the compression member and the tension member and secured to both.

In testimony whereof I have hereunto set my hand this 7th day of January, A. D. 1902.

JOHN M. HANSEN.

Witnesses:
CHAS. F. CHUBB,
WM. BIERMAN.