No. 676,735. Patented June 18, 1901.

D. C. COURTNEY.

CAR TRUCK BOLSTER.

(Application filed Jan. 28, 1901.)

(No Model.) 3 Sheets—Sheet 1.

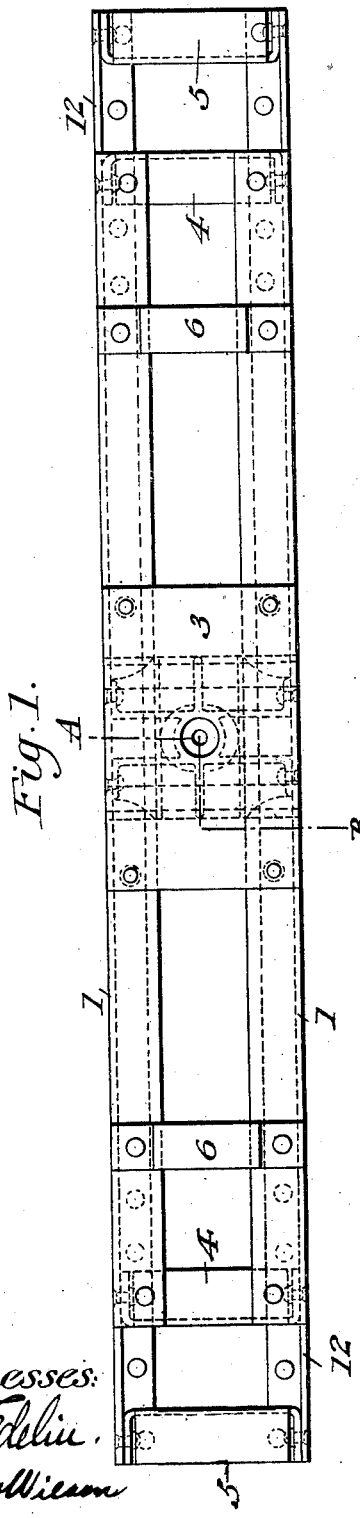


Fig. 1.

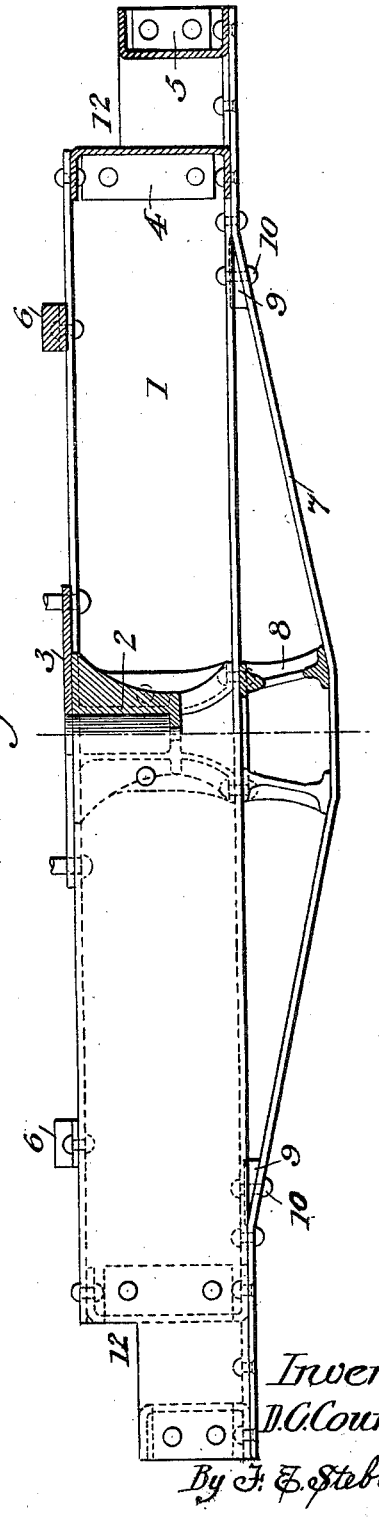


Fig. 2.

Witnesses:
D. W. Edelin.
A. M. Wilson

Inventor:
D. C. Courtney.
By F. E. Stebbins
Atty.

No. 676,735.

Patented June 18, 1901.

D. C. COURTNEY.

CAR TRUCK BOLSTER.

(No Model.)

(Application filed Jan. 28, 1901.)

3 Sheets—Sheet 2.

Fig. 4

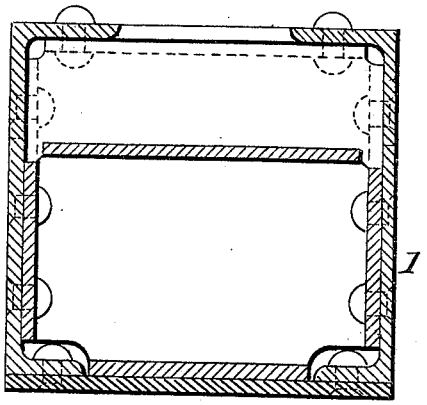


Fig. 3.

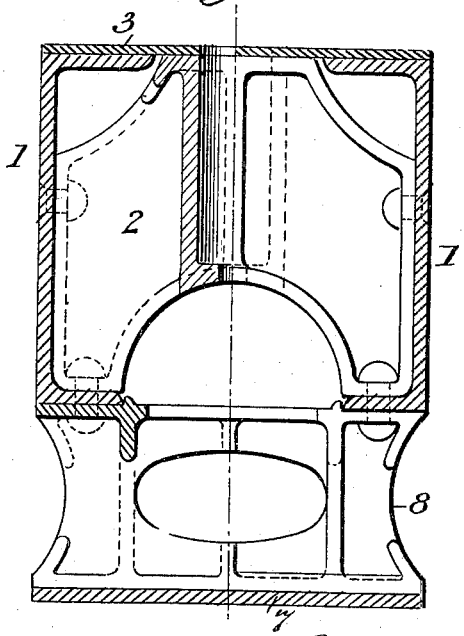


Fig. 7.

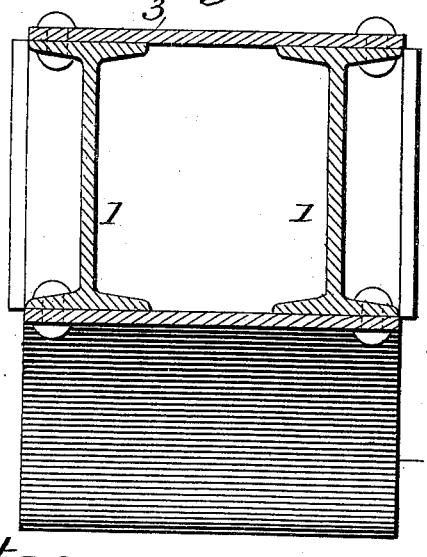
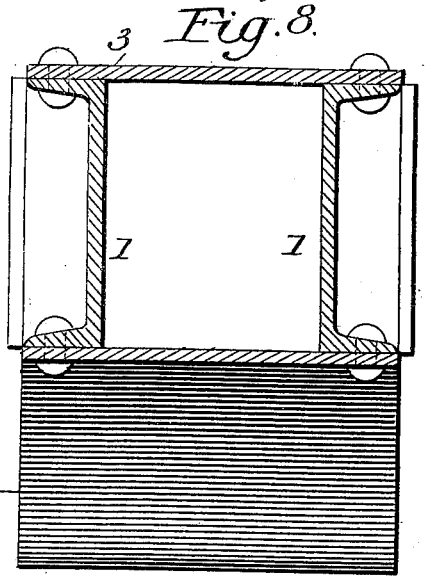


Fig. 8.



Witnesses:
D. W. Edelin.
A. M. Wilson

Inventor:
D. C. Courtney.
By F. G. Stebbins,
Atty.

No. 676,735.

Patented June 18, 1901.

D. C. COURTNEY.

CAR TRUCK BOLSTER.

(Application filed Jan. 28, 1901.)

(No Model.)

3 Sheets—Sheet 3.

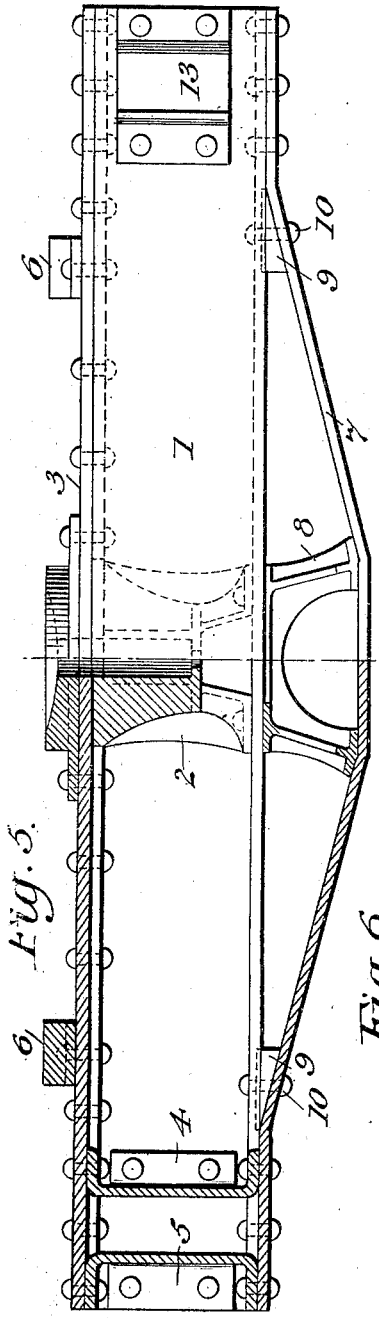


Fig. 5.

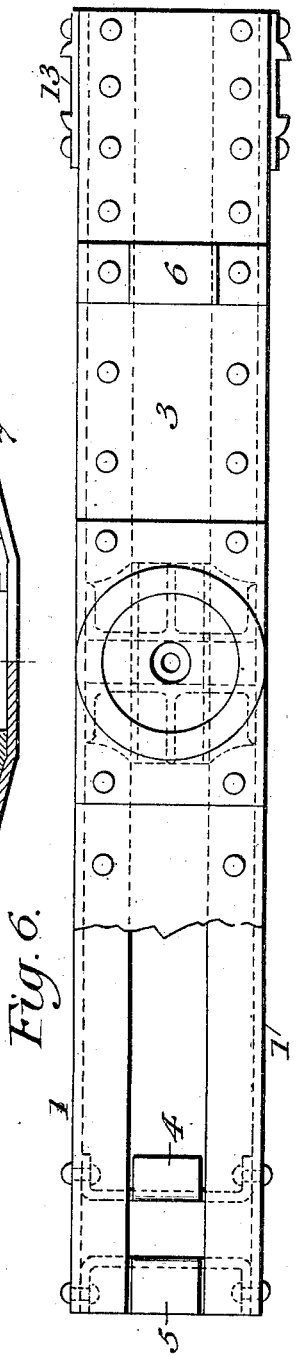


Fig. 6.

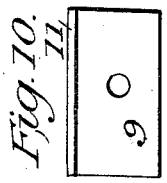


Fig. 10.

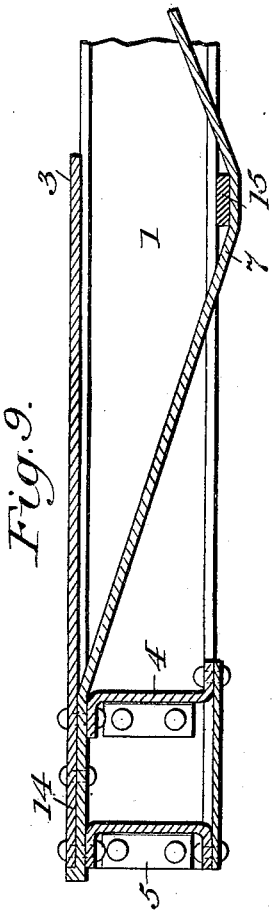


Fig. 9.

Witnesses:
D. W. Edelin.
A. M. Wilson

Inventor.
D. C. Courtney.
By F. G. Stebbins.
Atty.

UNITED STATES PATENT OFFICE.

DANIEL C. COURTNEY, OF ELKINS, WEST VIRGINIA.

CAR-TRUCK BOLSTER.

SPECIFICATION forming part of Letters Patent No. 676,735, dated June 18, 1901.

Application filed January 28, 1901. Serial No. 45,116. (No model.)

To all whom it may concern:

Be it known that I, DANIEL C. COURTNEY, a citizen of the United States, residing at Elkins, in the county of Randolph and State of West Virginia, have invented certain new and useful Improvements in Car-Truck Bolsters, of which the following is a specification.

The object of my invention is the production of a car-truck bolster which can be constructed in the ordinary car-shop by the use of common and well-known appliances and tools, which can be repaired when necessary under the same conditions and with equal facility, which shall be adapted for use with any of the known types of truck-frames, which shall be simple in construction and comparatively cheap in first cost, which shall have the metal of the members so disposed as to most effectively withstand the strains to which they may be subjected, which shall not bend at the center and allow the side bearings to come in contact, and which shall possess other and desirable characteristics and features constituting the same a superior means for performing the requisite functions.

My invention consists of a bolster having the compression member formed of commercial rolled flanged beams or shapes of standard sizes united by any suitable means and a tension member consisting of a piece of metal bent to shape and with its ends secured to the bottom surface or top portion of the compression member, a separator and truss-stool in one or more pieces being interposed between the said compression and tension members at the center.

It further consists in certain novelties of construction and combinations and arrangements of parts hereinafter set forth and claimed.

The accompanying drawings illustrate five examples of the physical embodiment of my invention constructed according to the best modes I have so far devised for the practical application of the principle.

Figures 1, 2, 3, and 4 show the first example, Fig. 1 being a top plan view, Fig. 2 a side view of Fig. 1, partly in section, Fig. 3 a section through the center on line A B, and Fig. 4 an end view. Figs. 5 and 6 show a second example, Fig. 5 being a side view, partly in section, and Fig. 6 a top plan view with the end of the top plate broken away. Fig. 7 is an end view of the third example, in which the main elements of the compression member consist of I-beams. Fig. 8 is an end view of a fourth example, showing the main elements of the compression member made of channel-beams with their flanges turned outwardly. Fig. 9 is a sectional view of a fifth example, in which the tension member has its ends secured to the top part of the compression member. Fig. 10 illustrates a wedge filling-piece.

Referring to the several figures of the drawings, the numeral 1 designates rolled flanged beams of commercial sizes and weights such as can be purchased in open market. These beams are arranged in pairs, spaced apart, with their webs in vertical planes, and constitute the compression member of the bolster.

2 designates cast or wrought iron separators of any desirable shape and size and each located between two flanged beams at their centers. They are preferably made of an irregular shape to secure the greatest strength with the least weight of metal. The top surface of each separator is on a level with the top flanges of the beams, and rivets conveniently placed secure the same in place.

3 designates flat metallic plates secured to the top flanges of the beams, and the plate in each example may extend the entire length of the bolster or to a convenient distance each side of the center of the beams. The plate at the center rests upon the top of the separator, as shown.

4 designates inner spacing or distance pieces made by casting or by cutting a plate to shape and bending the edges at right angles to form flanges by which they are secured to the webs of the rolled beams by rivets.

5 designates outer or end spacing-pieces formed and secured in position in a manner similar to the inner spacing-pieces.

6 designates side bearings of any approved type.

The tension members 7 consist of flat bars or plates of metal bent to the shape shown and having the ends riveted to the bottom surfaces or top part of the compression members.

8 designates malleable-iron truss-stools in-

terposed between the compression and tension members at the center and secured in position by rivets or otherwise.

9 designates wedges interposed between the flanges of the rolled beams and the tension member at the angles where the ends of the latter are riveted to the former. A rivet 10 in each case is passed through the flange, the wedge, and the tension-plate. Each wedge has a flange 11, which abuts against the flange of a rolled beam.

In Figs. 1, 2, and 4 the flanges and webs of the rolled beams are cut away at 12, so that the ends of the bolster may fit under the top arch-bar of a diamond or other truck frame when it is desired to locate the center plate or top surface of the bolster in a relatively high position.

In Figs. 5 and 6 I have shown column-guides 13 riveted to the webs of the rolled beams, and similar guides may be used in connection with the other examples.

In Figs. 1, 2, 3, and 4 the rolled channel-beams are shown with the flanges facing each other. In Fig. 8 the flanges extend outwardly, and in Fig. 7 the rolled beams are I-shaped in cross-section and have flanges extending in both directions.

In Fig. 9 the compression member of the bolster is located between the rolled beams of the compression member and its ends secured at 14 to the top plate of the said compression member. This disposition of the parts may be adopted when the bolster is to be placed very low in the truck-frame or near the road-bed or used with a spring-plank. Any form of filling-piece can be used between the two members, either a bar 15 or a casting such as shown in the other examples.

From the foregoing description it will become obvious that I have produced a car-truck bolster which fulfils all the conditions set forth as the purpose of my invention, besides possessing other desirable characteristics and features of value.

It will be observed that the tension member in Fig. 9 has its ends riveted to the compression member in a plane above a central longitudinal plane through the center of the bolster and that the tension member in the other examples has its ends riveted to the compression member in a plane below the same, that the top plate 3 strengthens the upper chord of the compression member and takes the lateral strains, that the separator stiffens the compression member and receives the end of the center pin, that the wedges 9 reinforce the tension member at the points of greatest strain, and that the particular relative disposition of the flanged beams and tension member secures the maximum of strength with a minimum of weight. The bolster can of course be used as a floating bolster, as a swing-bolster, or as a rigid bolster.

While I have specifically illustrated only five examples of the physical embodiment of my invention, I do not thereby limit the scope thereof to such examples, inasmuch as changes and substitutions can be introduced in the practical application of the principle without constituting a substantial departure.

What I claim is—

1. The combination in a bolster, of a compression member consisting of two flanged rolled beams with their webs in vertical planes; vertical spacing-pieces between the two beams of the compression member; and a bent tension member having its ends secured to the edges only of the compression member in a plane at one side of a horizontal plane through the center of the said compression member.

2. The combination in a bolster, of a compression member consisting of two flanged beams having their webs in vertical planes; a bent tension member secured at its ends to the lower surface of the compression member; and a top plate extending each side of the center of the compression member.

3. The combination in a bolster, of a compression member consisting of two flanged beams having their webs in vertical planes; a bent tension member having its ends secured to the lower surface of the compression member; and a central truss stool or support.

4. The combination in a bolster, of a compression member consisting of flanged beams having their webs in vertical planes; a bent tension member secured at the ends to the lower surface of the compression member; and wedges between the compression and tension members.

5. The combination in a bolster, of a compression member consisting of two flanged beams having their webs in vertical planes; a bent tension member secured at its ends to the lower surface of the compression member; a truss stool or support; and a separator between the flanged beams.

6. The combination in a bolster, of a compression member consisting of two flanged beams with their webs in vertical planes and having their ends cut away, as at 12; and a tension member secured at its ends to the compression member.

7. The combination in a bolster, of a compression member consisting of two flanged beams having their webs in vertical planes; a top plate secured to the flanges of the said beams; and a bent tension member located entirely below the compression member and secured thereto at the ends by rivets.

8. The combination in a bolster, of a compression member consisting of flanged beams with their webs in vertical planes and flanges facing each other; a cast-metal separator; a tension member secured to the lower surface of the compression member; and a truss-stool between the tension member and separator.

9. The combination in a bolster, of a compression member consisting of parallel flanged beams with their webs in vertical

planes; and a bent tension member having its ends riveted to the lower surfaces of the compression member and extending to the ends of the said compression member whereby seats for springs are formed.

10. The combination in a bolster, of a compression member consisting of rolled flanged beams having their webs in vertical planes; a bent tension member having its ends riveted to the flanges of the beams comprising the compression member; and a truss-stool.

11. The combination with a bolster, constructed substantially as described, of wedge-shaped filling-pieces, 9, secured in position by rivets between the lower flanges of the compression member and the tension member.

12. The combination with a bolster comprising a compression member of flanged beams having their webs in vertical planes and constructed substantially as described, of a tension member, 7, secured at the ends to the lower horizontal surface of the compression member; and a truss-stool.

In testimony whereof I affix my signature in presence of two witnesses.

DANIEL C. COURTNEY.

Witnesses:

CHARLES E. METZ,

RALPH WILLARD.