No. 847,885. PATENTED MAR. 19, 1907.

A. B. BELLOWS.

TRUCK BOLSTER.

APPLICATION FILED AUG. 3, 1906.

2 SHEETS—SHEET 1.

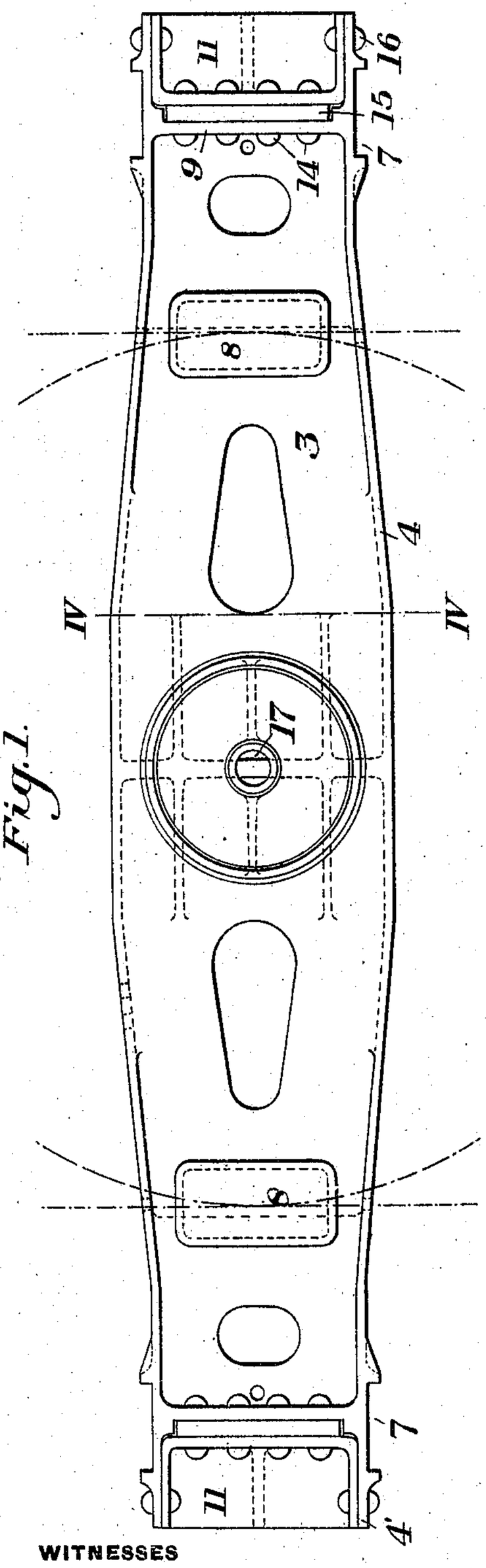

Fig. 1.

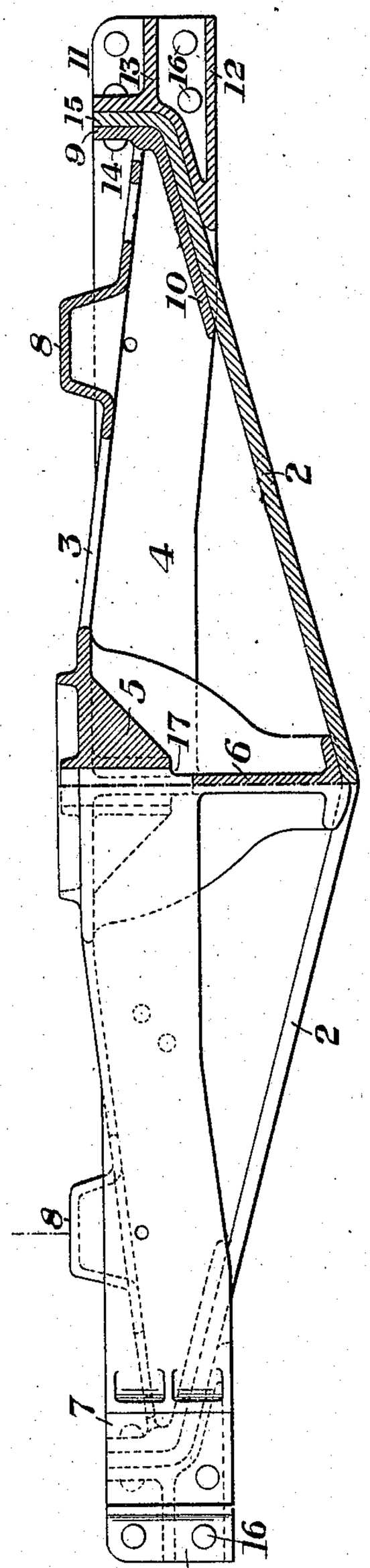

Fig. 2.

WITNESSES

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2 SHEETS—SHEET 2.

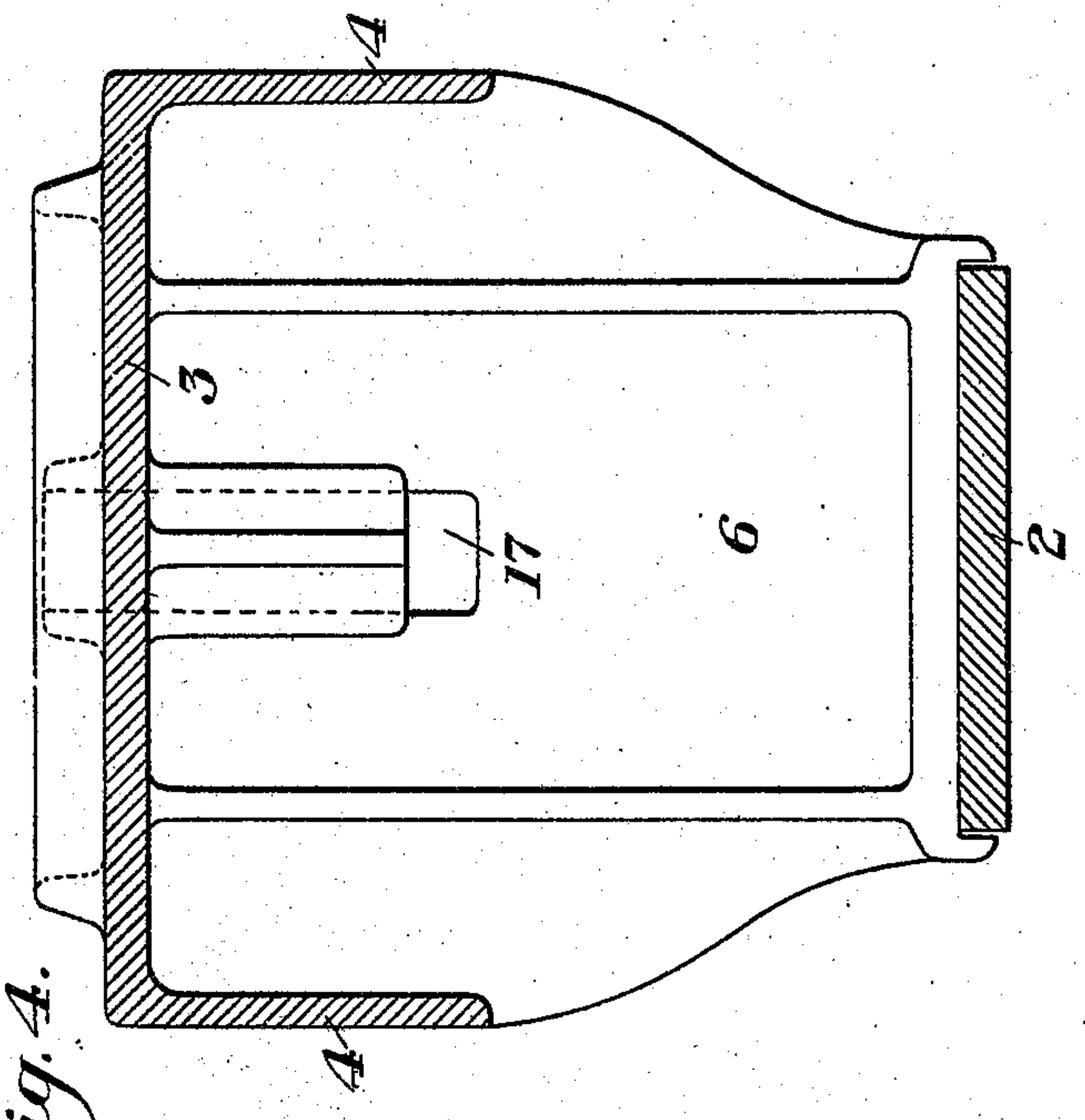

Fig. 4.

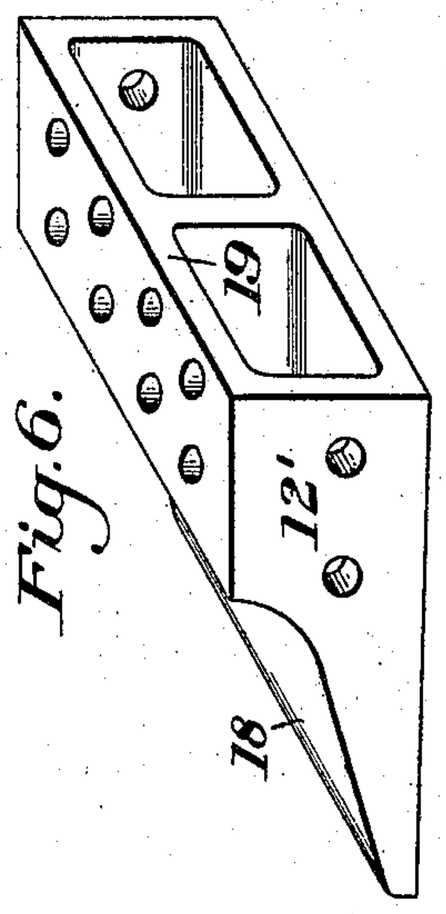

Fig. 6.

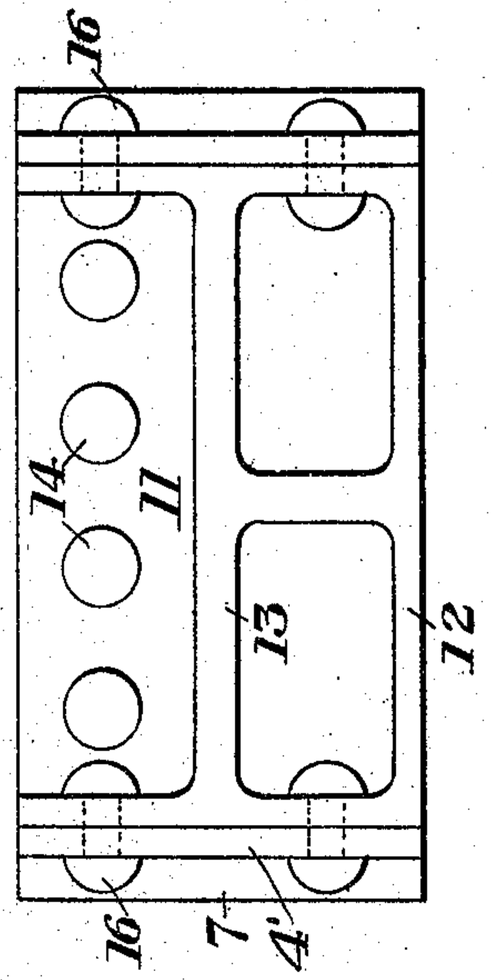

Fig. 3.

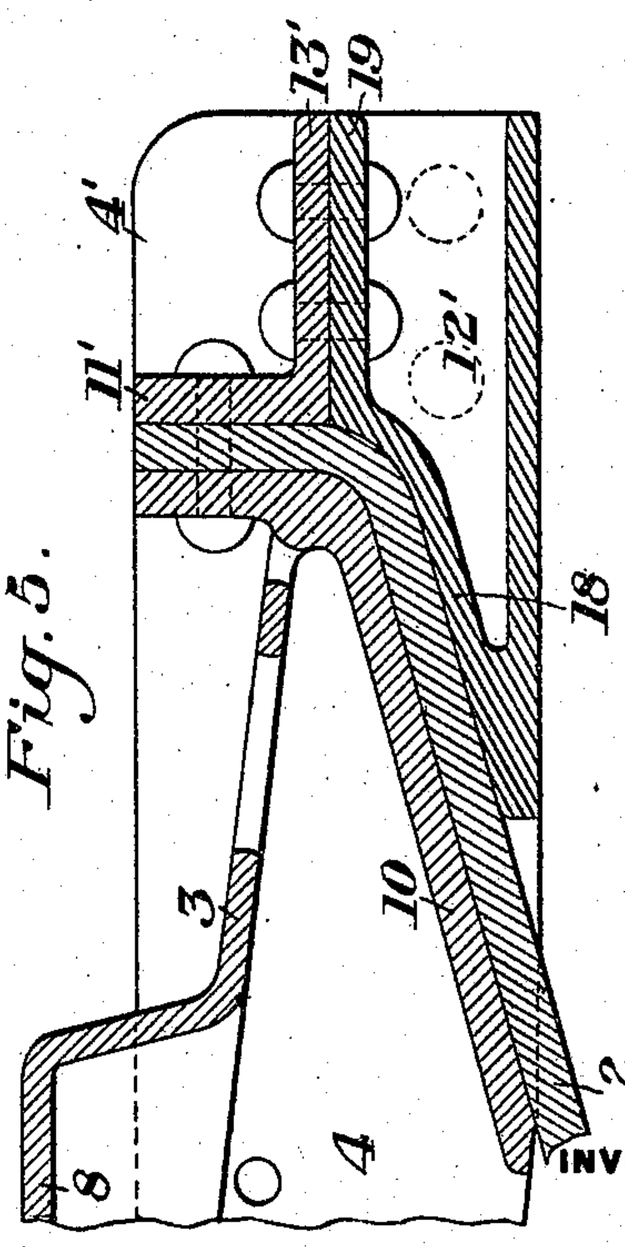

Fig. 5.

WITNESSES

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UNITED STATES PATENT OFFICE.

ARTHUR B. BELLOWS, OF PITTSBURG, PENNSYLVANIA.

TRUCK-BOLSTER.

No. 847,885. Specification of Letters Patent. Patented March 19, 1907.

Application filed August 3, 1906. Serial No. 329,003.

To all whom it may concern:

Be it known that I, ARTHUR B. BELLOWS, of Pittsburg, Allegheny county, Pennsylvania, have invented a new and useful Truck-Bolster, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a top plan view. Fig. 2 is a side elevation, one-half being in vertical section. Fig. 3 is an end elevation. Fig. 4 is a cross-section on the line IV IV of Fig. 1, and Fig. 5 is a partial vertical section showing a modified form of end connection, and Fig. 6 is a perspective view of the modified clamping member.

My invention relates to that class of bolsters wherein steel castings are combined with rolled tension members; and the object of the invention is to provide a simple, cheap, and strong structure of this character in which the tension portion of the tension member shall not be weakened by perforating it for rivet-holes.

It is also designed to provide for an integral center plate and side bearings, which avoids the necessity for riveting these parts as separate members to the bolster proper.

The main feature of my invention lies in the end connection, the bent end of the tension member being clamped between mating surfaces and free from holes in the tension portion thereof.

Another feature of my invention consists in providing a separable end piece, which is slipped into place and riveted or bolted to clamp the tension member in position.

In the drawings, referring to the form of Figs. 1 to 4, inclusive, I show the bolster as composed of a cast top member and a rolled plate or bar tension member 2. The cast member is provided with a web portion 3 and side flange portions 4 4, which give it the form of a channel in cross-section at or near the center thereof. The flanges are preferably vertical and straight-edged at top and bottom, while the web is preferably inclined downwardly toward each end, so that a cross-section near the end of the casting is substantially of I-beam form. The center plate 5, the strut 6, and the side guides 7, as well as the side bearings 8, are preferably cast integral with the compression member. I may of course form any or all of these parts separately and secure them to the cast member, but prefer to make them integral, as shown, since this avoids the labor and expense of riveting and reduces the number of parts. Near each end of the compression member is a transverse partition or web 9, which merges into an inclined cross-web 10. The flanged extensions 4′ extend beyond the cross-web 9, and into this pocket is slipped a clamping-casting 11, whose inner face is preferably shaped to conform to the webs 9 and 10. The casting 11 is formed with a closed bottom portion 12, which forms the spring-seat. It is also preferably provided with an intermediate strengthening-web 13, which in the form shown leaves two recesses beneath and one larger recess above it. This clamping-casting is secured to the main compression member by means of a series of rivets 14, which also pass through the bent-up end 15 of the tension member 2 and through the web 9. The two castings are also secured together by the side rivets 16, which extend through their flanges. In order to provide for easy extraction of the king-bolt from its socket in the center plate when it becomes broken, I cast the strut with a vertical hole which terminates at the bottom in side openings 17. Through these openings a tool may be inserted by which the king-bolt may be forced upwardly to remove it when desired. A key may also be driven through these slots 17 in order to key the king-bolt in place.

The form of the end connection may be varied in many different ways. Thus in Figs. 5 and 6 I show a form where the web 11′ and the web 13′ are cast integral with the extension-flanges 4′. In this case the clamping member consists of the spring-plate 12′ with the inclined clamping portion 18. This casting has a top web 19, which is riveted through the web 13′ of the main casting, thus clamping the tension member in place, as before.

The web 3 may extend along the top of the flanges, in which case rivets 14 would be below the top of this web and above the web 10. As indicated by the crossing lines, it will be seen that the center of gravity of the cast compression member intersects the center of the gravity of the tension member vertically over the center of the spring-seat, thus avoiding undesirable bending moments.

It will be noted that while the bent-up ends of the tension members are perforated for rivets there are no rivet-holes in the tension member proper—that is, in that portion lying between the bend and the strut. I am

thus enabled to avoid increasing the amount of metal in the tension member in order to compensate for the metal taken out by the rivet-holes. The cast member may be lightened somewhat by holes cast therein, as indicated in the plan view, and if desired rivets may pass through the tension member proper, the clamping-casting, and the web 10 by inserting them through the end holes of the compression member.

The advantages of my invention result from the doing away with rivets in the tension portion of the tension member, and particularly from the cheap, strong, and efficient end casting between the cast compression member and the tension member. The side slots of the center hole allow easy access to the king-bolt, and the whole construction may be cheaply and easily made. I am aware that it is old to make such an end connection by bending the end of the tension member into hook form. This, however, is objectionable, in that it injures the metal, as such bends must be made after the metal is heated. By bending this tension member to an angle of ninety degrees or more I can bend the metal cold, and thus avoid injuring it. Another advantage of my construction is that the tension member may be bent separately from the compression member and then applied directly thereto without further bending when in place, while in the hook form of connection above referred to each end must be heated and then bent around a part of the compression member by hammering or hand treatment. My bending can therefore be carried out by properly-constructed dies, which will make the bends uniform and bend both ends at the same time. The assembling of the bolster is thus made much easier and cheaper. Owing to the use of the inserted and casting, variations in the form and dimensions of the main casting are easily compensated for, as well as the variations in the rolled part, by varying the position of the inserted end castings.

Many variations may be made in the form and arrangement of the tension member, compression member, and the other parts without departing from my invention.

I claim—

1. In a truck-bolster, an upper cast compression member, and a tension member having upwardly-bent vertically-extending ends secured directly to the compression member; substantially as described.

2. In a truck-bolster, a cast compression member and a rolled tension member having bent ends secured directly to the compression member, and an endwise-inserted casting arranged to clamp the tension member in position; substantially as described.

3. In a truck-bolster, a cast compression member and a rolled tension member having bent ends secured directly to the compression member, an endwise-inserted casting arranged to clamp the tension member in position, and rivets extending through the inserted member, the bent end of the tension member and the vertical portion of the cast compression member; substantially as described.

4. In a truck-bolster, a cast compression member with horizontally-extending flanges, a tension member having bent ends within the flanges, an endwise-inserted clamping-casting between said flanges, and side rivets connecting the endwise-inserted clamping member to the flanges of the cast compression member; substantially as described.

5. In a truck-bolster, a cast compression member having open-ended pockets at its ends, a tension member having its ends secured directly to the compression member, and separate clamping members arranged to be secured in the pockets; substantially as described.

6. In a truck-bolster, a tension member having bent-up ends extending vertically and held between two transverse webs of a compression member, and rivets extending horizontally through the said three parts; substantially as described.

7. In a truck-bolster, a tension member having bent-up ends held between two transverse webs of a compression member, and rivets extending through the said three parts, the cross-webs extending along the tension member for a portion thereof below the bend; substantially as described.

8. In a truck-bolster, a cast compression member whose cross-section near its center is substantially that of a channel, while its cross-section near the end is substantially like an I-beam and a separate tension member with its ends connected to the end portions of the compression member; substantially as described.

9. In a truck-bolster, a cast compression member having vertical side flanges, and a web which is inclined from the center portion downwardly and outwardly between the said flanges, the flanges extending above the web near the ends of said member and a separate tension member with its ends connected to the end portions of the compression member; substantially as described.

In testimony whereof I have hereunto set my hand.

ARTHUR B. BELLOWS.

Witnesses:
GEO. B. BLEMING,
LAWRENCE H. LEE.