No. 658,227. Patented Sept. 18, 1900.

H. C. WILLIAMSON & H. PRIES.

CAR BOLSTER.

(Application filed Feb. 26, 1900.)

(No Model.) 2 Sheets—Sheet 1.

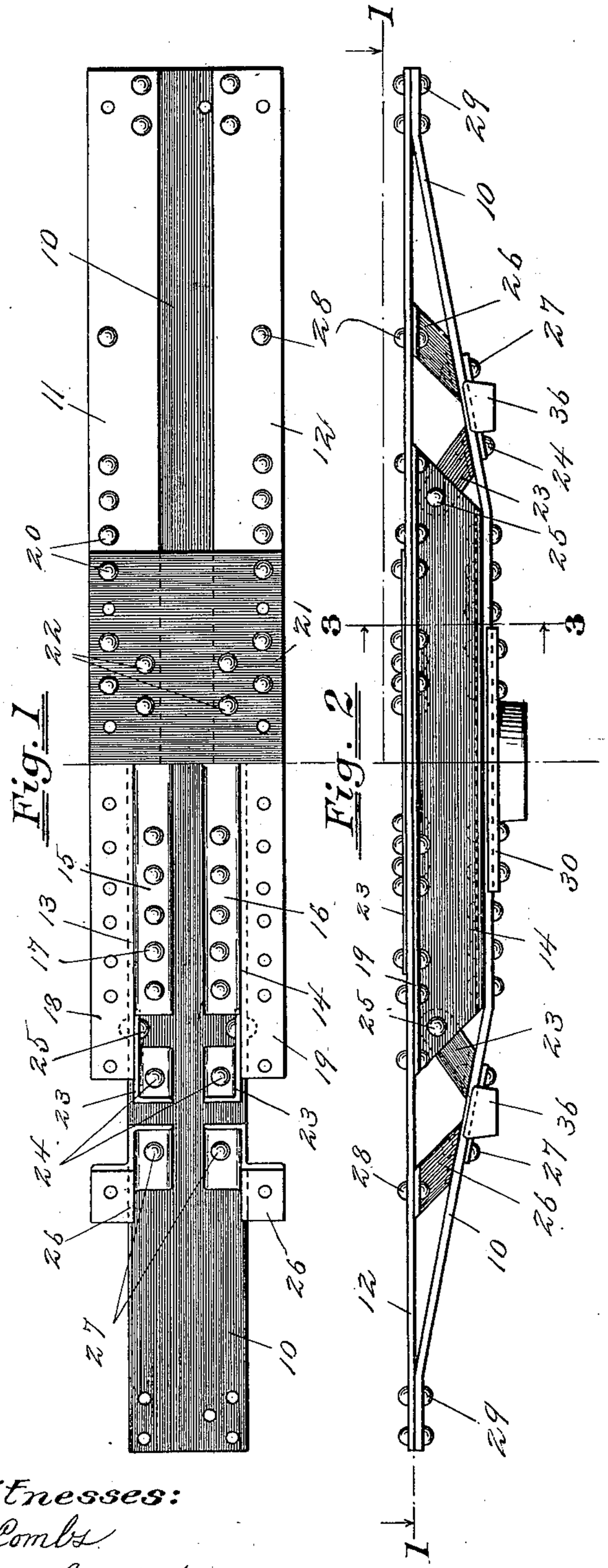

Fig. 1

Fig. 2

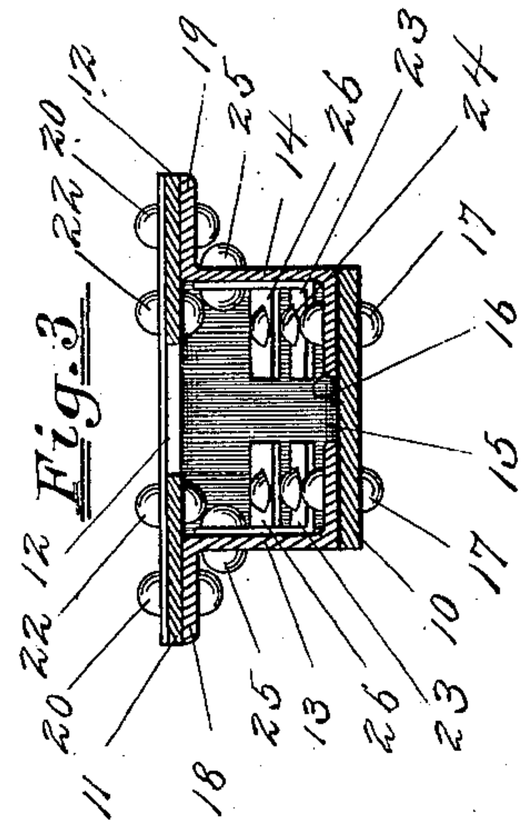

Fig. 3

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Fig. 4

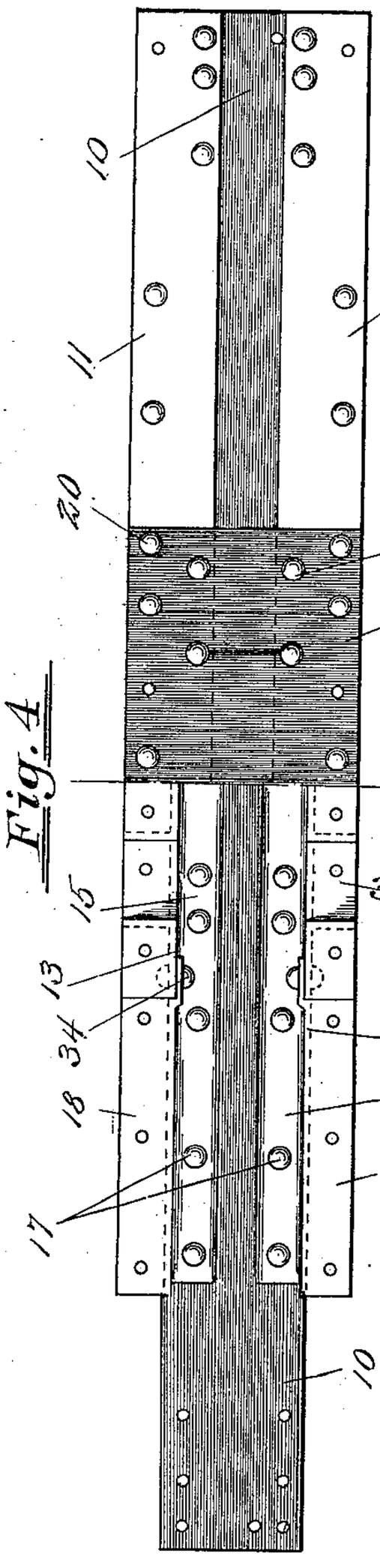

Fig. 5

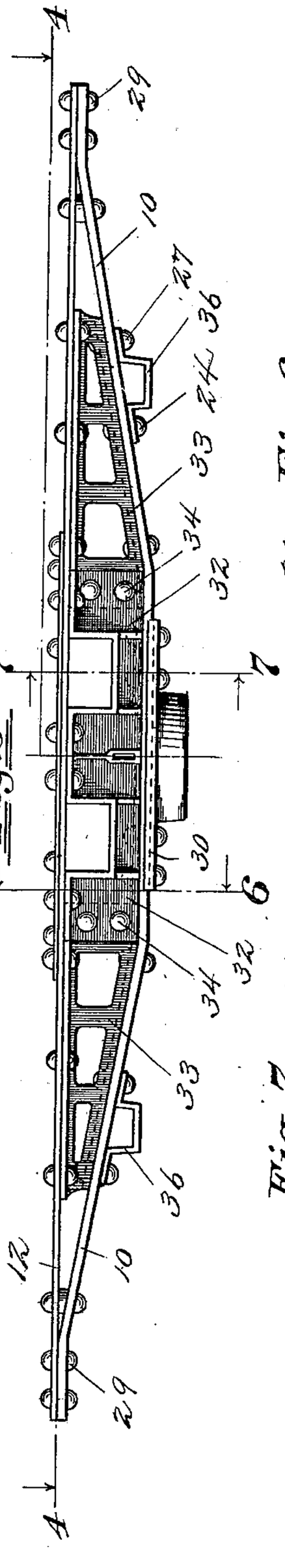

Fig. 6

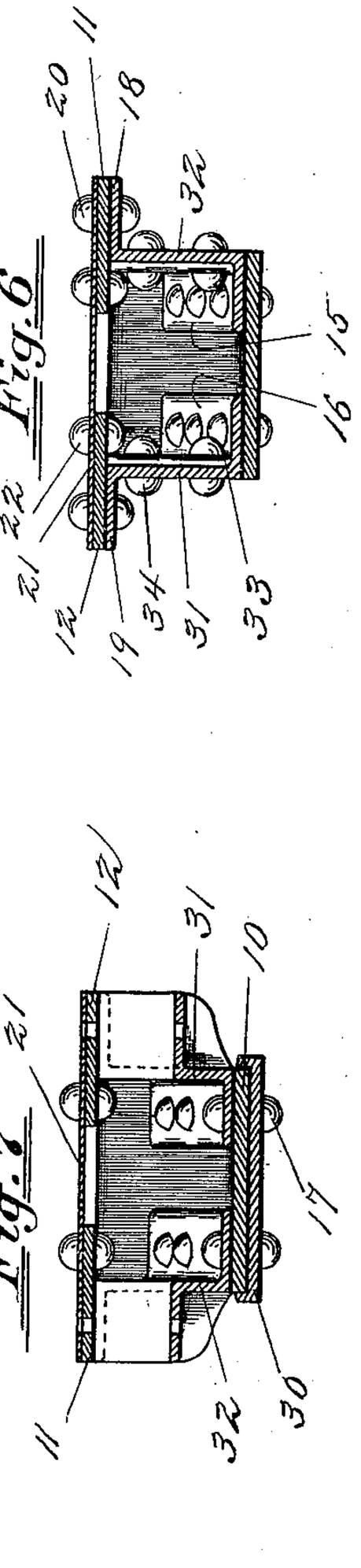

Fig. 7

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UNITED STATES PATENT OFFICE.

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CAR-BOLSTER.

SPECIFICATION forming part of Letters Patent No. 658,227, dated September 18, 1900.

Application filed February 26, 1900. Serial No. 6,654. (No model.)

To all whom it may concern:

Be it known that we, HENRY C. WILLIAMSON and HERMAN PRIES, citizens of the United States, and residents of Michigan City, county of La Porte, and State of Indiana, have invented certain new and useful Improvements in Car-Bolsters, of which the following is a specification, and which are illustrated in the accompanying drawings, forming a part thereof.

The invention relates particularly to body-bolsters for cars, but may be adapted without material modification to bolsters for use in other situations.

The first consideration in the construction of a bolster is of course strength; but it is of well nigh as much importance that the bolster be made as light as possible. A third important consideration is that the bolster should be so constructed that its several parts may be conveniently secured together.

The object of this invention is to secure great strength with but little weight and to provide for economy of construction. These objects are attained by means of the construction hereinafter fully described and which is illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of the bolster, some portions being cut away, the view being indicated by the line 1 1 of Fig. 2. Fig. 2 is a side elevation of the bolster. Fig. 3 is a transverse section on the line 3 3 of Fig. 2. Figs. 4, 5, 6, and 7 show a somewhat-modified form of construction, Fig. 4 being a plan view with some portions cut away, the planes on which the view is taken being indicated by the line 4 4 of Fig. 5. Fig. 5 is a side elevation of the bolster; and Figs. 6 and 7 are transverse sections taken on the lines 6 6 and 7 7, respectively, of Fig. 5.

The compression member 10 is a flat steel bar, and the tension member comprises the two flat steel bars 11 and 12, riveted at their ends to the ends of the compression member, as shown at 29. The tension member is straight throughout its length. The compression member is parallel with the tension member at its central portion, comprising substantially one-third of its entire length, and from the ends of this parallel portion is inclined upwardly until it joins the tension members near their ends.

The struts 13 14 are commercial rolled **Z**-bars in the preferred form of construction. (Illustrated in Figs. 1, 2, and 3.) Their lower flanges 15 16 rest upon and extend inwardly from the edges of the compression member 10 and are riveted to this member, as shown at 17. Their upper flanges 18 19 extend outwardly in contact with the under faces of the tension members 11 and 12 and are riveted thereto, as shown at 20. The ends of these struts are preferably cut oblique, so that their lower flanges are shorter than their upper flanges and the length of the former is the same as the length of the central portion of the compression member. A tie-plate 21 is superimposed upon the central portion of the tension member and is riveted thereto, as shown at 22, and is also secured by the rivets 20. Braces 23 23 are secured by rivets 24 to the compression member 10 near the side bearings 36 and to the web of the struts 13 and 14 by rivets 25. Additional braces 26 may be secured by means of rivets, as shown at 27 and 28, to the compression and tension members intermediate of the side bearings 36 and the ends of the bolster. The center plate 30 is riveted to the under face of the compression member 10.

In lieu of the rolled steel struts 13 and 14 we may use the cast struts 31 32, preserving, however, the **Z** form as before. We may substitute for the braces 23 26 cast braces, as 33, which are suitably riveted to the compression and tension members and preferably overlap the ends of the struts 31 32 and are riveted thereto, as shown at 34. The struts 31 32 may be provided with apertures 35 for the reception of draft-beams. In all other respects the bolster shown in Figs. 4 to 7 is the same as the bolster shown in Figs. 1 to 3.

By the employment of a tension member of two parts, as 11 and 12, we are able to secure a very wide sill-bearing without either reducing the tensile strength or augmenting the weight, the strength and weight both being the same as would be the case if the two members 11 and 12 were united at their adjacent edges, in which case the sill-bearing would of course be greatly reduced. By the

use of the Z form of struts we are thus enabled to widen the upper surface of the truss without correspondingly widening the compression member 10, so that we are enabled to give this latter member sufficient thickness to secure adequate strength without unduly increasing its weight. The Z form of strut furthermore enables us very materially to strengthen both the tension and compression members at their central portions, being the portions at which they are called upon to sustain the maximum strain. The tie-plate 21 and the center plate 30 also contribute to the tensile and compression strength of the members to which they are applied, while the tie-plate stiffens the truss, materially increasing its strength to resist lateral strains. A further and marked advantage in the construction described arises from the ease with which the several parts of the truss may be assembled and secured. The struts are first riveted to the compression member and the tie-plate to the tension members. The tension and compression members are now secured together and the rivets 20, securing the tension members and struts, are set. The braces may be secured as an intermediate or subsequent portion. It will be seen that all the rivets may thus be secured easily, no difficulty being experienced in applying tools to either end thereof.

While we greatly prefer the divided or two-part tension member, we do not desire to be limited thereto, as a single bar extending the entire width of the bolster may be used in lieu of the two bars 11 and 12.

We claim as our invention—

1. In a car-bolster, in combination, a compression member, a pair of tension members spaced apart, and struts in Z form having their flanges secured respectively to the compression member and the tension members.

2. In a car-bolster, the combination with tension and compression members, of struts in Z form having their flanges secured to the first-named members.

3. In a car-bolster, in combination with tension and compression members, parallel through their middle sections and converging at their ends, of struts in Z form extending from end to end of the parallel portions of the first-named members and having their flanges secured thereto.

4. In a car-bolster, in combination, a compression member, a two-part tension member longitudinally separated, and a tie-plate superimposed upon and binding together the two parts of the tension member.

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