

No. 705,358.

Patented July 22, 1902.

H. R. KEITHLEY.  
TRUCK BOLSTER.

(Application filed Apr. 11, 1902.)

(No Model.)

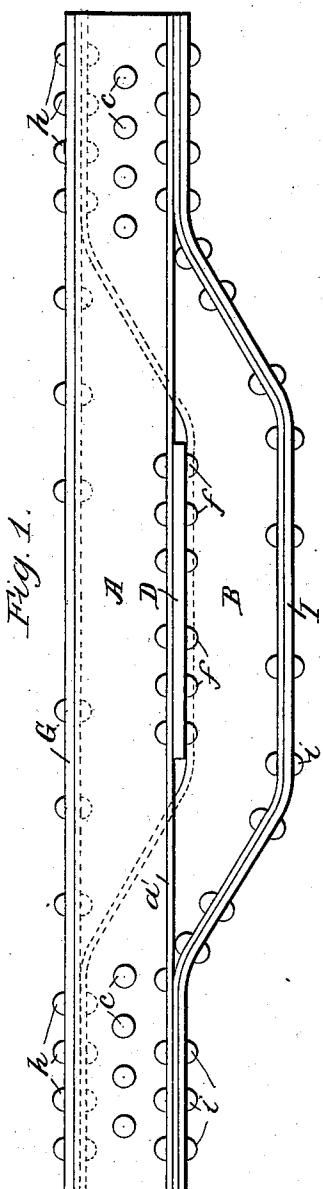


Fig. 3.

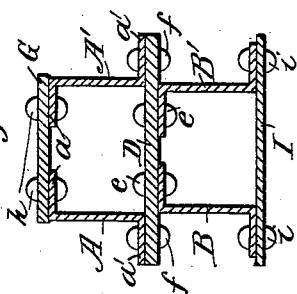


Fig. 4.

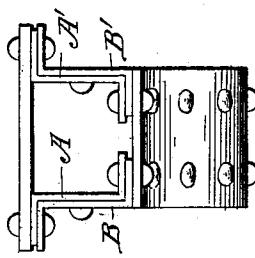
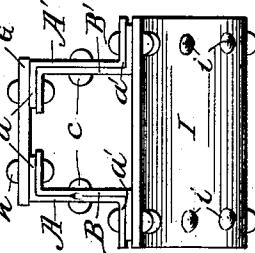


Fig. 2.



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# UNITED STATES PATENT OFFICE.

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## TRUCK-BOLSTER.

SPECIFICATION forming part of Letters Patent No. 705,358, dated July 22, 1902.

Application filed April 11, 1902. Serial No. 102,435. (No model.)

To all whom it may concern:

Be it known that I, HERBERT R. KEITHLEY, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented new and useful Improvements in Truck-Bolsters, of which the following is a specification.

This invention relates to bolsters for railway-cars, and more especially to a truck-bolster built up of commercial steel shapes and plates.

The object of the invention is to provide a bolster of simple and desirable construction which will efficiently carry the load which it is designed to support and which will withstand the severe strains and shocks to which it is subjected in a direction at right angles to the length of the bolster or parallel to the length of the car; also, to provide the maximum stiffness and strength throughout, and especially at the ends, which are of much less depth than the middle portion of the bolster.

In the accompanying drawings, Figure 1 is a side elevation of a bolster embodying the invention. Fig. 2 is an end elevation thereof. Fig. 3 is a vertical transverse section through the middle of the bolster. Fig. 4 is an end elevation showing a slightly different arrangement of the parts.

Like letters of reference refer to like parts in the several figures.

The bolster is made in the form of a truss, of which the upper or compression chord is formed of two Z-bars A A' and the lower or tension chord of two Z-bars B B'. The Z-bars are all arranged with their webs standing vertically and their flanges extending horizontally.

In the construction shown in the drawings the Z-bars of the upper chord are spaced apart and arranged with their upper flanges a extending inwardly or toward each other, while their lower flanges a' project outwardly. The Z-bars of the lower chord are similarly arranged. At the ends of the bolster the vertical webs of the upper and lower Z-bars on each side are arranged side by side and are secured together by rivets or the like c and their flanges are superposed. At the middle of the bolster the bars of the lower chord are bent downwardly below the plane of the bottoms of the Z-bars of the upper chord. The

bars are secured firmly in this relation by a plate D, which is placed between the bars of the upper and lower chords and is secured to the upper flanges of the bars of the lower chord by rivets or the like e and to the lower flanges of the bars of the upper chord by rivets or the like f.

G represents an upper horizontal tie-plate secured to the upper flanges of the bars of the upper chord by rivets or the like h, and I represents a lower horizontal tie-plate secured to the lower flanges of the bars of the lower chord by rivets or the like i. The rivets h and i at the end of the bolster pass through and connect the superposed flanges of the bars of the upper and lower chords to each other and to the tie-plates.

The above-described construction gives a large surface area for riveting through both the webs and flanges of the Z-bar at the ends of the bolster, and the entire metal section of both chord members is disposed to the best possible advantage for stiffness and strength. The increased depth of the center portion of the bolster affords great vertical stiffness and strength for supporting loads, and the described arrangement of the Z-bars and tie-plates provides a maximum stiffness and strength in a transverse direction or in a direction parallel with the length of the car, as the flanges of the Z-bars are arranged horizontally and a Z-bar has greater strength to resist stress in a plane parallel to its flanges than other standard shapes, owing to the wide spread of its flanges on each side of the web.

While the above-described construction is deemed preferable, it is obvious that the Z-bars of the upper and lower chords can be arranged with their upper flanges projecting outwardly and the lower flanges extending inwardly. Such a modification of the arrangement is shown in Fig. 4. In other respects the construction shown in this figure is similar to that of the other figures.

I claim as my invention—

1. In a bolster, the combination of upper Z-bars arranged with their webs vertically, lower Z-bars arranged with their webs vertically, the flanges of said upper and lower Z-bars being superposed at the ends of the bolster, and upper and lower tie-plates, substantially as set forth.

2. In a bolster, the combination of upper **Z**-bars arranged with their webs vertically, lower **Z**-bars arranged with their webs vertically and beside the webs of the upper **Z**-bars at the ends of the bolster, the flanges of said upper and lower **Z**-bars being superposed at the ends of the bolster, rivets or the like connecting the webs and the flanges of said **Z**-bars at the ends of the bolster, and upper and lower tie-plates, substantially as set forth. 20

5 3. In a bolster, the combination of upper **Z**-bars arranged with their webs vertically and their upper flanges extending toward each other, lower **Z**-bars arranged with their webs vertically and beside the webs of the upper **Z**-bars and with their upper flanges extending toward each other beneath the upper flanges of the upper **Z**-bars at the ends of the 25

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bolster, and upper and lower tie-plates, substantially as set forth.

4. In a bolster, the combination of upper **Z**-bars arranged with their webs vertically, lower **Z**-bars arranged with their webs vertically, the flanges of said upper and lower **Z**-bars being superposed at the ends of the bolster, upper and lower tie-plates, and a plate arranged between the upper and lower **Z**-bars at the center of the bolster, substantially as set forth. 30

Witness my hand this 4th day of April, 1902.

HERBERT R. KEITHLEY.

Witnesses:

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