

UNITED STATES PATENT OFFICE.

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CAR-BOLSTER.

SPECIFICATION forming part of Letters Patent No. 781,115, dated January 31, 1905.

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To all whom it may concern:

Be it known that I, CHARLES T. WESTLAKE, a citizen of the United States, residing at St. Louis, in the State of Missouri, have invented a new and useful Improvement in Car-Bolsters, of which the following is a specification.

My invention relates to a car-bolster, and has for its object to provide a rigid and durable bolster having the moments of inertia about its horizontal and vertical axes equal, or, in other words, adapted to resist strain alike in a vertical and horizontal direction.

The invention consists in features of novelty, as hereinafter described and claimed, reference being had to the accompanying drawings, forming part of this specification, whereon—

Figure 1 is a top plan of a car-truck bolster constructed according to my invention; Fig. 2, a side elevation thereof; Figs. 3 and 4, vertical transverse sections through the bolster on lines 3-3 and 4-4, respectively; in Fig. 2 looking from the right; and Fig. 5, an end elevation thereof. Fig. 6 is a vertical longitudinal section through a modified end portion of the bolster, and Fig. 7 a horizontal section thereof on line 7-7 in Fig. 6.

Like letters and numerals of reference denote like parts in all the figures.

A represents my improved car-bolster, which is composed, preferably, of cast-steel integral throughout, and consists of a central longitudinal flanged member, preferably an I-beam *a*, vertically arranged and having its web 1 intersected at right angles and preferably intermediately to its upper and lower flanges 2 by the web 3 of a similar flanged member or I-beam *b*, the webs 1 and 3 having, preferably, lightening-holes 4 5, respectively, therethrough, as shown, or they may be solid throughout, if desired. The flanges 6 of the beam *b* are opposite and vertically parallel to the web 1 of the beam *a* at a suitable distance from each side thereof, respectively, and form the sides of the body of the bolster A. The flanges 2 and 6 of the beams *a* and *b* converge longitudinally from the middle of the bolster A respectively to their ends, where they are united to the laterally-

widened end portions *c* of the bolster A, each end portion *c* being preferably box-shaped and adapted on its under side to bear upon the bolster-springs, (not shown,) the web 1 of the beam *a* extending longitudinally through each end portion *c* between the top and bottom plates or walls 7 7' thereof to the corresponding end of the bolster A, as shown. The web 3 of the beam *b* preferably intersects with the web 1 of the beam *a* in proximity to the upper flanges 2 of the latter and unites therewith at their convergent ends and with the top plates or walls 7 of the end portions *c*, as shown; but, if desired, the web 3 may intersect with the web 1 at a greater or less distance from the upper flanges 2, as found most suitable.

The general outline or configuration of the bolster A may be as shown—that is to say, with its maximum depth in the middle and thence inclined at the top, sides, and bottom toward the laterally-widened end portions *c*, which are of reduced depth and preferably horizontal, or the configuration of the bolster A may be otherwise modified without departure from the principle of its construction.

If desired, the flanged members *a* and *b*, in lieu of being I-shaped, as described, may be channel or Z shaped; but I prefer an I shape as the best adapted to effect the object of my invention.

In the case of a body-bolster the box-shaped end portions *c*, as adapted on their under side for the bolster-springs, are dispensed with and the flanged members *a* and *b* continued in lieu thereof to the ends of the bolster A and adapted thereat for bolting to the car-sills.

The center plate *d*, which is of the usual shape for receiving the body center plate, is preferably integral with the beams *a* and *b* at the middle of the bolster A and perforated centrally for the king-bolt, (not shown,) or the center plate may be of separate construction and secured to the body of the bolster by bolts.

e represents the side bearings, which are preferably integral with the upper flanges 2 of the beam *a* adjacent to their junction with the end portions *c* of the bolster A, and *f*

represents the lugs or guides for the truck-columns and preferably integral with the sides of the end portions *c*.

The advantage of the above construction of the bolster A is that by making the beams *a* and *b* I-shaped, with their webs 1 and 3 intersecting each other at right angles or respectively vertical and horizontal, they are of the best shape and in the most favorable position relatively to each other for resisting vertical and horizontal strains on the bolster with the least amount of material and maximum strength and rigidity.

Figs. 6 and 7 show the end portions *c'* of the bolster open at the bottom for receiving the bolster-springs, (not shown,) which bear at their upper ends against the top plate or wall 7 in lieu of against the bottom plate 7', as previously described, and which in this case is omitted, the web 1 of the bolster also in this case terminating with its flanges 2 at their junction with the inner transverse walls 8 of the end portions *c'*.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A car-bolster consisting of two flanged members intersecting each other at right angles, the flanges of the said members respectively converging longitudinally from the middle of the bolster toward the end portions thereof, the said end portions being adapted

to bear on the bolster-springs, and the said bolster having the center plate and the side bearings united thereto, substantially as described.

2. A car-bolster consisting of two flanged members intersecting each other at right angles, the flanges of the said members respectively converging longitudinally from the middle of the bolster toward the ends thereof, the said bolster having the center plate and the side bearings united thereto, substantially as described.

3. A car-bolster composed of cast-steel integral throughout, and consisting of two I-shaped beams intersecting each other at right angles, the flanges of the said beams respectively converging longitudinally from the middle of the bolster toward the end portions thereof, the said end portions being adapted to bear on the bolster-springs, and the said beams having the center plate, and the side bearings integral therewith, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES T. WESTLAKE.

Witnesses:

MARY D. WHITCOMB,
EDWARD W. FURRELL.