

UNITED STATES PATENT OFFICE.

ALBERT K. MANSFIELD, OF SALEM, OHIO.

CAR-BOLSTER.

SPECIFICATION forming part of Letters Patent No. 621,458, dated March 21, 1899.

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To all whom it may concern:

Be it known that I, ALBERT K. MANSFIELD, of Salem, in the county of Columbiana and State of Ohio, have invented a certain new and useful Improvement in Car-Bolsters, of which improvement the following is a specification.

The object of my invention is to provide a metallic bolster for supporting the frame of a railroad-car upon truck-wheels, which shall present the features of strength, lightness, comparatively slight vertical dimensions, and economy and facility of construction.

To this end my invention, generally stated, consists in the combination of two side members having upper and lower flanges and sets of stiffening-plates secured to said flanges and of different lengths, respectively, so as to constitute top and bottom members decreasing in thickness from the middle of the bolster toward the ends thereof.

The improvement claimed is hereinafter fully set forth.

In the accompanying drawings, Figure 1 is a side view in elevation of a body-bolster for a railroad-car, illustrating an embodiment of my invention; Fig. 2, a plan or top view of the same; Figs. 3 and 4, transverse sections at the lines *xx* and *yy*, respectively, of Fig. 1, and Fig. 5, a partial side view illustrating a modified form of end plate.

In the practice of my invention the two side members 1 1 of the bolster are in the form of rolled metal plates having upper and lower flanges and set vertically at a proper distance apart to allow the king-bolt of the truck to be passed between them. I-beams, as shown, are preferably employed; but, if preferred, the side members may be made of rolled channels or of plates pressed into channel form. The side members are connected for the major portion of their length by horizontal top and bottom members, each composed of a set of plates 3 4 (two or more of which may be employed in each set) of unequal lengths, respectively, and secured by means of rivets to the upper and lower flanges of the side members. The plates of the top and bottom members are provided centrally with holes 8 for the reception of the king-bolt and are disposed symmetrically on opposite sides of the middle line of the bolster, and the longer

plates 3 are set next to the flanges of the side members, the shorter plates 4 being on the outer sides of the plates 3. When more than two plates are employed, their lengths successively decrease outwardly from the flanges of the side members, so that the composite top and bottom members shall each progressively decrease in thickness from the middle of the bolster toward its ends. By this construction approximately uniform strength to sustain the load carried by the bolster is imparted without waste of material, and it will also be seen that the side members when stiffened, as above described, may be of comparatively slight height or depth.

While I have shown and described a bolster having built-up or composite top and bottom members, it will be obvious that these may, if preferred, be integral plates, tapered or inclined in opposite directions from their middle lines, without departure from the essential and governing characteristic of my invention.

A center plate 5 and side bearing-plates 6 6 are secured to the bottom member in the usual positions, and economy of construction may be promoted by forming the center plate integral with the outer stiffening-plate of the lower member, this being readily effected by pressing said plate outwardly into the desired form.

The bolster is connected to the car-sills by bolts passing through the flanges of the side members and through the top and bottom members, except as to the outer sills, the connecting-bolts of which may pass through stepped or shouldered end plates 7 and through the lower flanges of the side members. As shown in Figs. 1 and 2, the upper flanges and portions of the webs of the side members are cut away to admit the end plates, and where side sills of greater depth are used the vertical portions of the end plates may abut for their entire depth against the webs of the side members, the lower horizontal portions extending about in line with the lower flanges. The end plates are thus adapted to receive both vertical and horizontal bolts, as shown in Fig. 5, and a firm connection of the bolster and side sills is thus assured.

It will be obvious that my improvement

while illustrated as embodied in a body-bolster is equally adaptable to use in a truck-bolster. It provides a box-girder bolster, which is strong and light, and specially adapted to use in shallow form, such as the conditions of body-bolsters ordinarily require, and in which bolts or rivets passing from top to bottom are inadmissible. The top and bottom members, being independently riveted to the side members, are best adapted to successfully resist shearing strains and make the beam a complete unit.

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

1. A box-girder car-bolster in which are combined two side members having upper and lower flanges and set sufficiently far apart to admit a king-bolt, top and bottom members having central king-bolt holes and decreasing in thickness from their middle portion toward their ends, and rivets which secure the top and bottom members independently to the upper and to the lower flanges, respectively, of the side members.

2. A box-girder car-bolster in which are combined two side members having upper

and lower flanges and set sufficiently far apart to admit a king-bolt, top and bottom members formed of sets of stiffening-plates of different lengths respectively, each having a central king-bolt hole, the longer or longest plate of each set being placed next to the side members, and the shorter plate or plates being exterior thereto in inverse order as to length, rivets securing the several plates of the top member to the upper flanges of the side members, and rivets securing the several plates of the bottom member to the lower flanges of the side members.

3. In a car-bolster, the combination of two side members having upper and lower flanges, top and bottom members secured to said flanges and decreasing in thickness from the middle of the bolster toward the ends thereof, and stepped or shouldered end plates secured to the upper flanges of the side members for the reception of side sills of a car-frame.

ALBERT K. MANSFIELD.

Witnesses:

J. SNOWDEN BELL,

C. A. WILLIAMS.