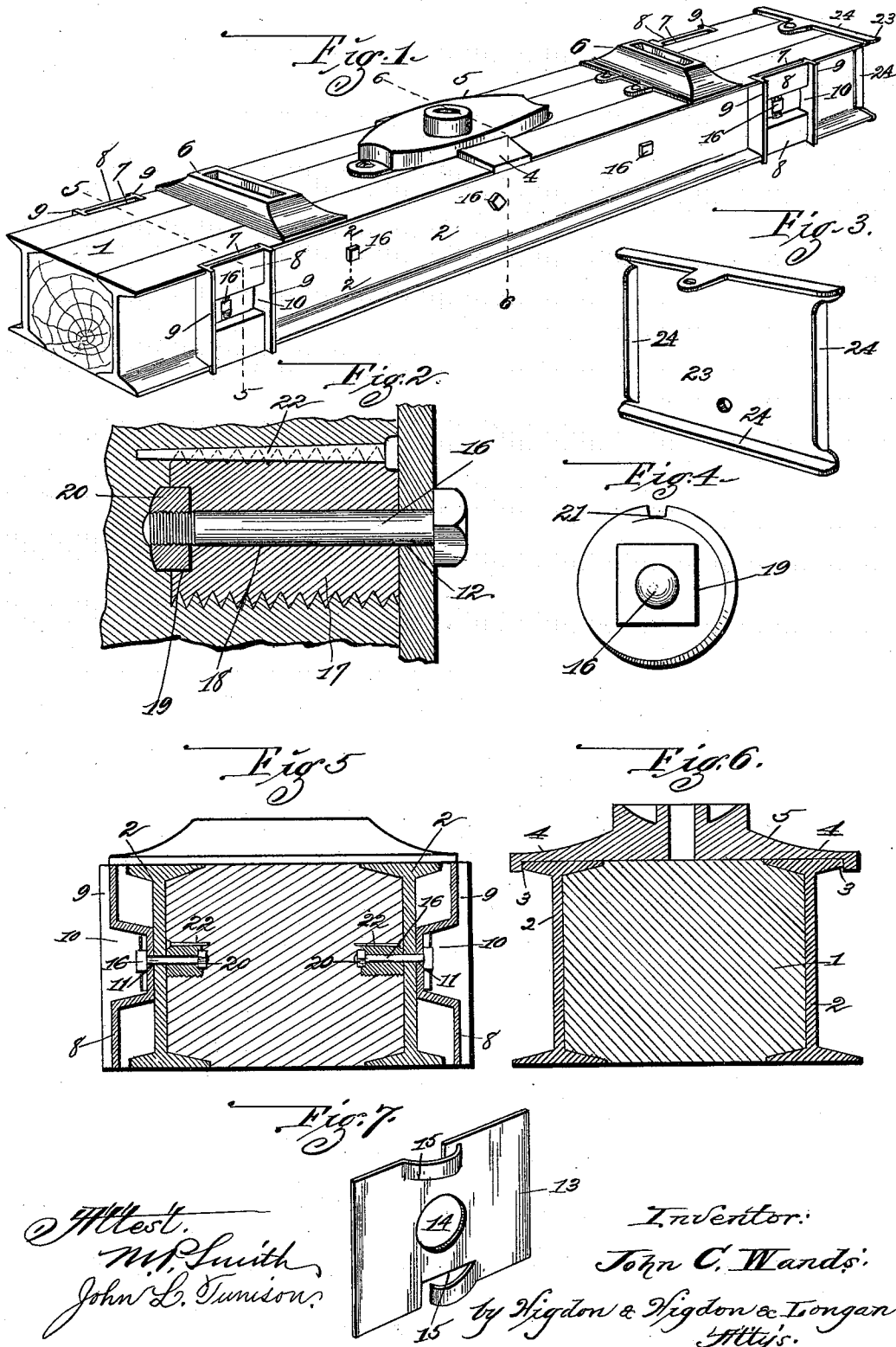


(No Model.)

J. C. WANDS.
CAR BOLSTER.

No. 542,909.

Patented July 16, 1895.



Attest.
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UNITED STATES PATENT OFFICE.

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CAR-BOLSTER.

SPECIFICATION forming part of Letters Patent No. 542,909, dated July 16, 1895.

Application filed May 13, 1895. Serial No. 549,119. (No model.)

To all whom it may concern:

Be it known that I, JOHN C. WANDS, of the city of St. Louis and State of Missouri, have invented certain new and useful Improvements in Car-Bolsters, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to an improved car-bolster; and it consists in the novel construction, combination, and arrangement of parts, hereinafter described and claimed.

In the drawings, Figure 1 is a view in perspective of the preferred form of my improved car-bolster. Fig. 2 is an enlarged sectional view taken approximately on the indicated line 2 2 of Fig. 1. Fig. 3 is a view in perspective of one of the end plates of which I make use in carrying out my invention. Fig. 4 is a rear end elevation of a threaded socket of which I make use in carrying out my invention. Fig. 5 is a cross-sectional view taken on the line 5 5 of Fig. 1. Fig. 6 is a cross-sectional view taken approximately on the indicated line 6 6 of Fig. 1. Fig. 7 is a view in perspective of a nut-lock I employ in the preferred form of my improved bolster.

In the construction of the preferred form of my improved bolster I make use of a timber 1 approximately rectangular in cross-section and having its side corners cut away in order to allow ordinary I-beams 2 to be fitted to the sides of said timber. Located at the centers of these I-beams, and in the outer edges of the top pair of outwardly-extending flanges, are slots or rectangular cut-away portions 3, in which are located the downwardly-turned ends of plates 4 that extend laterally from the center bearing 5, said center bearing being bolted at its ends to the timber 1. Located upon the top of the so-formed bolster, at equal distances from the center bearing 5 and toward the ends thereof, are side bearings 6, which may be of any form and construction desired.

Located at equal distances from the center of the bolster and formed in the outwardly-projecting flanges of the I-beams are vertically-aligned slots or cut-away portions 7, there being four pairs of these slots 7, two on each side of said bolster. Located in these

pairs of vertically-aligned slots or cut-away portions are vertical guides 8, the same being constructed with side flanges 9. Recesses 10 are formed in these vertical guides 8, and the rear walls of said recesses rest directly against the webs of the I-beams. Formed in the rear walls of these recesses are apertures 11, and like apertures 12 are formed in the webs of the I-beams in direct alignment with said apertures 11. Nut-locks are located in the recesses 10 and comprise plates, such as 13, provided with centrally-arranged apertures 14. Above and below the apertures 14 are formed slits 15, and the material in the plate between said slits 15 and the top and bottom edges of said plate 13, is bent or bowed outwardly to engage the faces on the heads of the bolts, said bolts being indicated by the numeral 16. These bolts 16 pass through the aligned apertures 11 and 12 and through exteriorly screw-threaded sockets, such as 17, made of cast-iron or other suitable material. Each of said sockets 17 is constructed with an axial bore or passage 18, and in the rear end of each of said sockets is formed a rectangular recess 19 that is for the reception of a nut 20 that is located upon the screw-threaded end of the bolt 16. Extending longitudinally through the screw-threaded periphery of the socket 17 is a rectangular groove 21, in which is located an ordinary spike or nail 22 that performs the function of a key when the socket is properly positioned in the side of the timber 1. Located at suitable distances along the sides of the bolster, and in the webs of the I-beams and in the timber 1, is a series of these sockets and bolts. The manner of locating said sockets and bolts in position is as follows:

Previous to the assembling of the various parts of the bolster, there is formed in the sides of the timber 1 a series of horizontally-arranged bores of such a size as that the sockets 17 may be readily screwed therein. The nuts 20 are now located in the rectangular recesses 19 in the rear ends of the sockets, and bolts of the same diameter, but somewhat shorter than the bolts 16, are passed through the sockets 17, and when properly located therein the heads of said bolts will lie adjacent the faces of the sockets, and the screw-

threaded ends thereof will be located in the nuts 20. The inner ends of said sockets 17 are now located in the bores formed in the sides of the timber 1, and by now applying a wrench or a similar tool to the heads of the bolts and manipulating the same the sockets are screwed into the bores formed in the sides of the timber 1 until the faces of said sockets lie flush with the sides of said timber. The nail or spike 22 is now driven through the rectangular groove 21, and by so doing the socket is very efficiently keyed or locked in the timber. The short bolts are now, by the aid of a wrench or like tool, removed, the nuts 20 necessarily remaining in the inner ends of the sockets 17. The I-beams are now located upon the sides of the timber 1 and the bolts 16 are now passed through the apertures 12 in the webs of the I-beams, that are so located as to coincide with the bores 18 through the sockets 17, and by means of a wrench or like tool, so manipulated as that their inner ends will pass into the nuts 20, and their heads will be engaged against the faces of the webs of the I-beams. The bolts that pass through the vertical guides 8 are locked by the plates 13, as previously described, while the bolts not passing through said guides 8 are locked by upsetting a portion of the faces of the webs adjacent the heads of said bolts by means of a cold chisel or like tool.

23 indicates one of a pair of end plates such as is used in carrying out the preferred form of my invention, said end plates being provided with flanges 24 that engage upon the top and side faces of the ends of the bolster. When said end plates are properly positioned, they add a neat and finished appearance to the bolster, and said plates assist in preventing any longitudinal or torsional movement of the I-beams relative to the timber. The function of the slots 3 and 7, together with the location of the vertical guides 8 and laterally-projecting arms 4 therein is to prevent any longitudinal movement of the bolster relative to the trucks upon which it is mounted.

The bolster being constructed of two materials, and said materials being of different densities and specific gravities, there will necessarily be a difference of expansion and contraction in said materials. To commensurate and alleviate said expansion and contraction the socket 17 and bolt 16 are provided. These devices being practically locked to one another and locked to the two materials will, when one material expands or contracts, cause the remaining material to follow in said expansion and contraction.

By my improved construction of bolsters the I-beams 2 may be provided with the proper slots and bolt or rivet holes at the rolling-mill, and then said I-beams may be properly fitted together as desired at the shop. Various forms of side and center bearings may be used in connection with my bolster, it be-

ing only essential to locate the ends of the vertical guides in the slots 7 and to locate the ends of the center bearing in the slots 3. By this construction movement of the I-beams and timber relative to one another longitudinally is prevented, and lateral strain upon the bolster is resisted.

Bolsters of my improved construction are easily and cheaply manufactured, combine strength and lightness in weight, all expansion and contraction of said bolsters are provided for, and said bolsters are very compact and efficient in use.

I claim—

1. A bolster, comprising a timber, metallic bars located upon the sides of said timber, means for holding said timber and bars together, and means for proportioning the expansion and contraction of one material relative the other.

2. A bolster, composed of two I-beams lying parallel with each other, a timber located between said I-beams, end-plates for said I-beams and timber, said I-beams being constructed with vertically aligned slots or cutaway portions in their outwardly extending flanges, vertical guides located in said vertically aligned slots, and suitable center and side-bearings for said bolster.

3. A bolster composed of two I-beams lying parallel with each other, a timber located between said I-beams, end-plates for said I-beams and timber, said I-beams being constructed with vertically aligned slots or cutaway portions in their outwardly extending flanges and adjacent their ends, and with slots or cutaway portions in their top pair of outwardly extending flanges at the centers thereof, vertical guides having their ends engaged in the pairs of vertically aligned slots or cutaway portions, a center-bearing constructed with arms, the ends of which engage in the central pair of slots, and means for proportioning the expansion and contraction of the I-beams relative the timber and vice versa.

4. In a bolster, a pair of I-beams having pairs of vertically aligned slots or cutaway portions formed in their outwardly extending flanges adjacent their ends, and slots or cutaway portions formed in the outwardly extending flanges at the centers of said I-beams, for the purposes herein specified.

5. In a bolster, a pair of I-beams, a timber located between said I-beams, screw-threaded sockets located in the sides of the timber adjacent the I-beams, said sockets having rectangular recesses in their rear ends, nuts located within said recesses, bolts passing through the webs of the I-beams and the sockets, and having their ends located in said nuts, and keys for said sockets.

6. In a bolster, a pair of I-beams, a timber located between said I-beams, vertical guides, a center and side-bearings located upon said bolster, screw-threaded sockets located in the sides of the timber adjacent the I-beams, suit-

able locking pins for preventing the with-
drawal of said sockets, said sockets having
recesses formed in their rear ends, nuts lo-
cated in said recesses, and bolts passing
5 through the webs of the I-beams, through the
sockets and into the nuts for locking the I-
beams onto the timber.

In testimony whereof I affix my signature
in presence of two witnesses.

JOHN C. WANDS.

Witnesses:

EDWARD EVERETT LONGAN,
JOHN L. TUNISON.