

(No Model.)

2 Sheets—Sheet 1.

C. T. SCHOEN.
BOLSTER FOR RAILWAY CARS.

No. 529,809.

Patented Nov. 27, 1894.

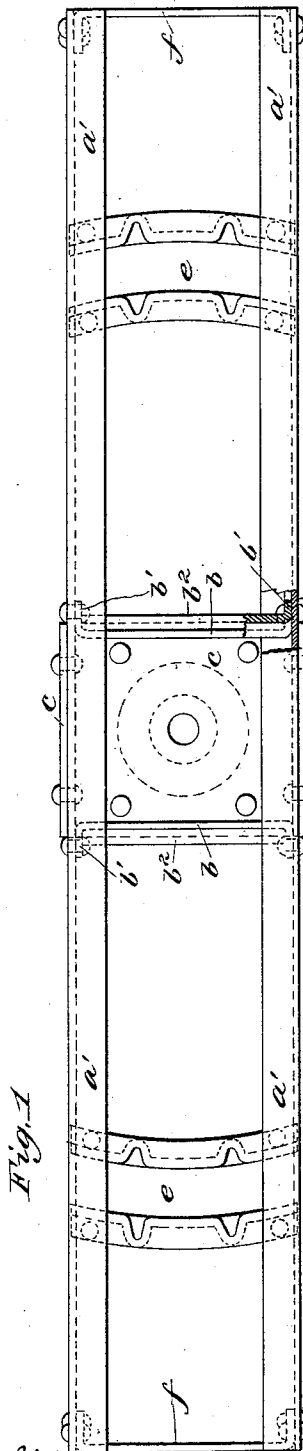


Fig. 1

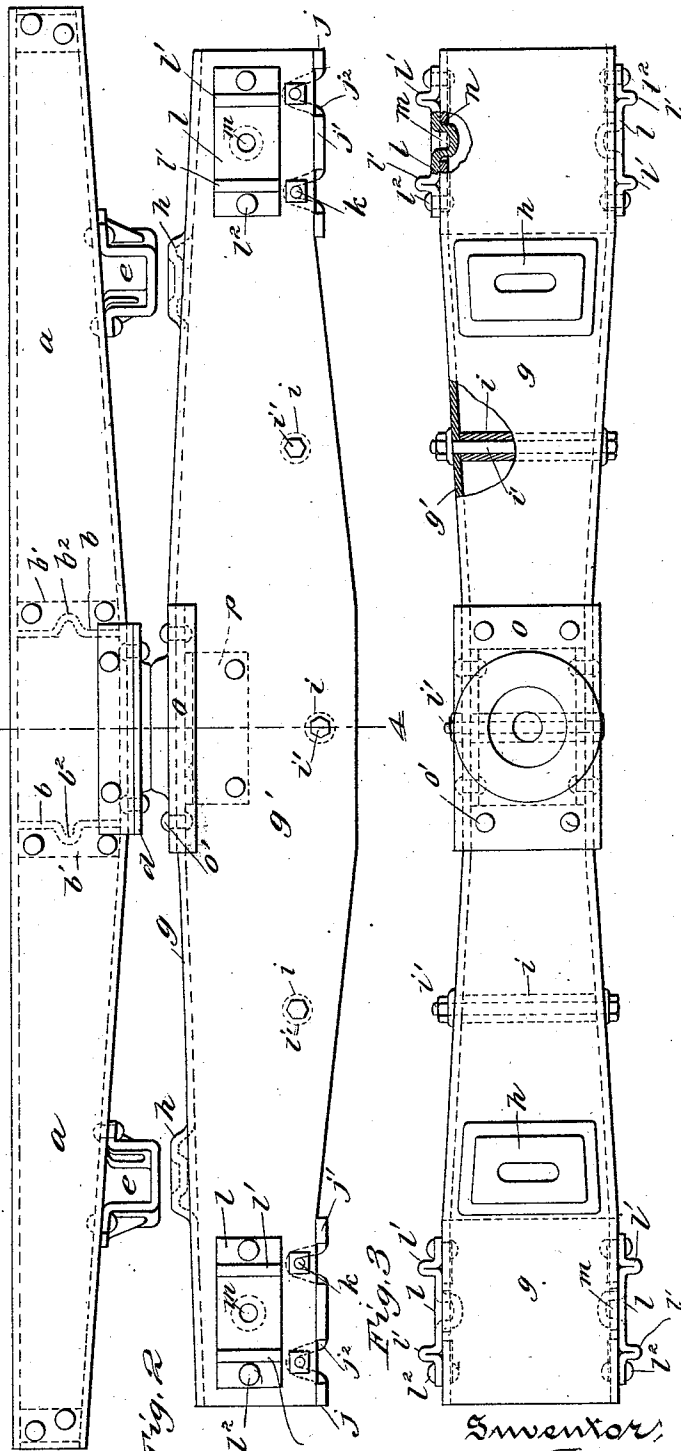


Fig. 2

Fig. 3

Witnesses,
J. F. Holman
C. A. Kinney.

Inventor,
Charles T. Schoen.
by W. H. Kinney
his atty.

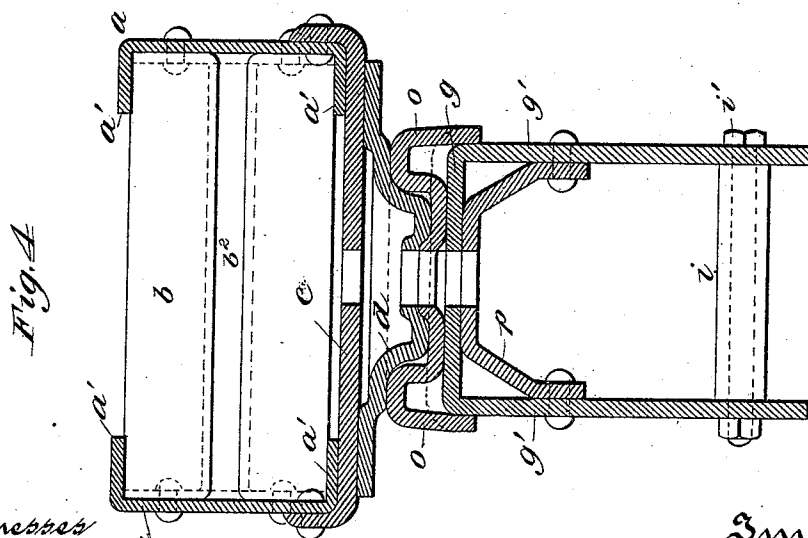
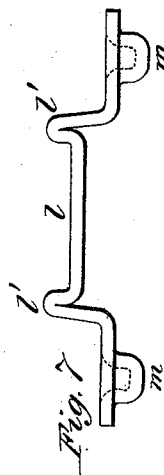
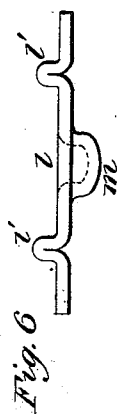
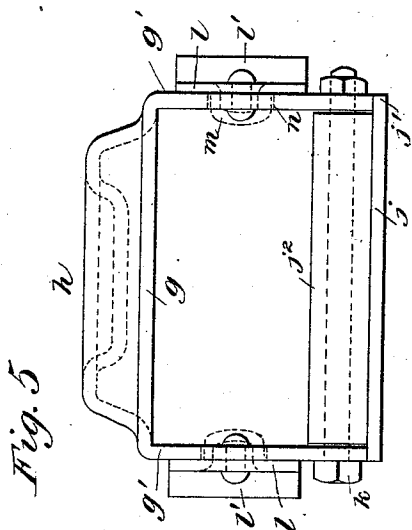
(No Model.)

2 Sheets—Sheet 2.

C. T. SCHOEN.
BOLSTER FOR RAILWAY CARS.

No. 529,809.

Patented Nov. 27, 1894.



Witnesses
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Inventor
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UNITED STATES PATENT OFFICE.

CHARLES T. SCHOEN, OF ALLEGHENY, PENNSYLVANIA.

BOLSTER FOR RAILWAY-CARS.

SPECIFICATION forming part of Letters Patent No. 529,809, dated November 27, 1894.

Application filed June 9, 1894. Serial No. 514,078. (No model.)

To all whom it may concern:

Be it known that I, CHARLES T. SCHOEN, a citizen of the United States, residing at Allegheny, in the county of Allegheny and State of Pennsylvania, have invented a certain new and useful Improvement in Bolsters for Railway-Cars, of which the following is a full, clear, and exact description.

A main object of this invention is to provide practically interchangeable standard body and truck bolsters for railway cars, made of steel pressed to shape. Inasmuch as various railway car constructions require bolsters of different widths, it would be necessary for a manufacturer of pressed steel bolsters to keep on hand or make to order dies for each width, and this would result in so much expense as to make the manufacture of pressed steel bolsters impracticable because of unprofitableness in competition with wooden and other bolsters. According to my invention, I make one or two standard minimum sizes which may be widened out through the various sizes up to the maximum, and thereby the manufacturer need carry no more than one or two sets of dies for the large and heavy work of the bolsters themselves.

In attaining the object of my invention, I make up the bolsters in skeleton form, and I adapt the truck bolster to various widths by additions of bolster column-guides of different elevations.

Having thus stated the principle of my invention, I will proceed to describe the best mode in which I have contemplated applying that principle and then will particularly point out and distinctly claim the part, improvement or combination which I claim as my invention.

In the accompanying drawings illustrating my invention, in the several figures of which like parts are similarly designated, Figure 1 is a bottom plan view of the body bolster, Fig. 2 is a side elevation of the body and truck bolsters assembled. Fig. 3 is a top plan view of the truck bolster. Fig. 4 is a transverse vertical section of the assembled bolsters, taken in the plane of line 4-4, Fig. 2. Fig. 5 is an end view of the truck bolster. Figs. 6 and 7 show, in top or edge view, two extremes of bolster column-guide-plates.

The body bolster, Fig. 1, is composed of

two essentially parallel and similar channels or channel beams *a*, made widest midway between their ends, with their upper surfaces flat and their lower edges tapering from the center toward each end. These channels are assembled with their flanges *a'* *a'* arranged toward one another, as more clearly exhibited in Fig. 4, and the said channels are rigidly connected by the transverse tie-pieces *b*, having the flanged ends *b'*, which are riveted, bolted, or otherwise firmly secured to the channels *a*, *a*. For increase of strength and stiffness, these tie-pieces may be provided with longitudinal corrugations *b''*, and these tie-pieces being located in the line of the draft rigging serve also to resist the force of concussions of the draft-timbers. At their centers the beams or channels are provided with a plate *c* overlapping the outer edges of the channels and bolted, riveted or otherwise rigidly secured thereto, and to this plate *c* the body half *d* of the center bearing plates is secured. The side-bearings *e* are also riveted, bolted or otherwise rigidly affixed to the channels, and the ends of the channels are supplied with tie-pieces *f*, also fixed rigidly thereto. In this way, a body bolster of any width, comparatively light, and very strong and durable may be manufactured very economically.

The skeleton truck bolster *g* is of the form of a channel narrowest transversely on top, midway between its ends, and flaring thence outwardly toward its ends, the sides of the ends being parallel by preference. The side flanges *g'* are, as in the case of the body bolster, widest or deepest at the center or midway between the ends, and both the upper and lower edges taper from the center toward the ends. The outer ends are closed or open as desired, and I have shown them open. The side bearings *h* are shown as struck up integrally from the face of the body bolster, as in my Patent No. 475,023, although it is within the present invention to make the side bearings for the truck bolster as separate structures, and bolt, rivet or otherwise fasten them to such bolster. The flanges or sides of the truck-bolster are braced by means of a sort of stay-bolt consisting of tubes *i* fitted inside between the said sides or flanges to resist deformation of the bolster in use, and held in place by bolts *i'* passed through the sides and

tubes, but of course any other form of stay-bolts may be used. Bearing plates j are provided at the ends of the truck bolster to receive the bolster springs, and these bearing
5 plates have their sides j' in contact with the edges of the sides or flanges of the bolster, and are provided with upwardly and inwardly projecting corrugations j^2 shorter than the width of the plates to fit inside between the
10 inner faces of the sides or flanges of the bolster, as shown in Fig. 5, to stay the plates and also the sides or flanges of the bolster laterally, the said plates being held in place by bolts k passed transversely through the bolster and the corrugations of the bearing plates.

The bolster column guide-plates l are constructed with the transverse ribs l' , and are riveted, bolted or otherwise secured to the sides or flanges of the bolster at l^2 . In order
20 to prevent the motion of the column guides on the plates from tending to shear off the fastenings of the latter, said plates may be provided with teats m to enter holes n in the sides or flanges. For minimum width bolsters
25 the guide-plates will be flat, as in Figs. 3 and 6, but in order to adapt such a bolster to interchange with a bolster of greater width, I provide guide-plates with raised seats as clearly shown in Fig. 7. By this means, the
30 bolster manufacturer need have machinery for making but one size of bolster and may adapt such bolster to all the various sizes or widths by providing suitable guide-plates; and since the guide-plates and the machinery
35 for making a variety of sizes of them are comparatively inexpensive, the manufacturer is enabled to provide all sizes of bolsters for new work and for interchange at comparatively small cost.

40 The truck bolster is provided with the center-bearing o of any approved construction, bolted, riveted or otherwise fastened thereto, at o' . I prefer to reinforce the bolster beneath the center bearing by means of a
45 bracket or brace p , bolted, riveted or otherwise secured thereto, substantially as indicated in Fig. 4.

I do not limit my invention in body-bolsters and column guide-plates to their use in combination with the special form of truck-bolster herein described, since, as is obvious,
50 truck-bolsters of other forms and constructions may be employed. I have shown and described this special form of truck-bolster
55 as one of many forms that may be used.

The bolsters, center bearings, guide-plates, spring bearing plates, side bearings, ties, &c., may be economically made by die-pressing
60 from plate or sheet steel, and so made, are very durable and light, and when combined, they form structures of great strength.

In addition to the advantages already described as resulting from or gained by my invention, I may add, that by constructing the
65 truck bolster narrower transversely at the center than at the ends, there is effected a saving in metal of from ten to twelve per

cent. of the width of plate required to get a certain desired depth of flange; and since the principal strain is vertical,—the bolster being
70 loaded at the center and supported at its ends,—the narrowing does not weaken the structure at all. In the use of one or two minimum widths of bolsters and the building
75 them up to the required width by the addition of column guide-plates, I am enabled to effect a practical plan for using pressed steel bolsters both for new work and for interchange. In practice, the truck bolsters vary
80 from, say, nine to fourteen inches in width, and between these limits there are upward of twenty five sizes. With my guide-plates used as bolster extension pieces, I am enabled to
85 adapt one or two of the smaller sizes of bolsters to all these sizes or widths, and obviously, at very small expense, it being necessary to have dies only for the production of the various sizes of guide plates rather than
90 for the bolsters. By making the body bolster of channels tied together, it is obvious that with the same channels, bolsters of different widths may be made by simply using the tie
95 pieces, side bearings, &c., of proper length to get the desired width, and hence this body bolster is as adaptable for or capable of interchange as is the truck bolster; and since the variations in widths of body bolsters is greater than that in the truck bolsters (being from
100 about nine to nineteen inches) the value and economy of my invention will be apparent.

It is obvious that it is within my invention to make a body-bolster of a single channel, as in the case of the truck-bolster, and so, also,
105 it is equally obvious that my invention comprehends making the truck-bolster of two channels tied together, as in the case of the body-bolster first described.

What I claim is—

1. A body or truck bolster composed of two channel-like beams, transverse tie-plates to
110 connect them, and side-bearings also connecting them, the channels or channel beams being deepest midway between their ends, substantially as described.

2. A body or truck bolster composed of two
115 channels or channel beams a, a , connected by the transverse tie-pieces b, b , arranged upright centrally within the channel beams, and the end tie-pieces f , whereby a bolster may be constructed of any desired width by varying
120 lengths of tie-pieces without alteration of the channels, combined with an applied center-bearing-plate and side-bearings, substantially as described.

3. A body or truck bolster comprising two
125 channels or channel beams, and tie-pieces b, b , consisting of longitudinally corrugated plates arranged between said channels at about their midway portion, and having
130 flanged ends by which they are secured to the beams, substantially as described.

4. A body bolster composed of channel beams whose sides are deepest in the center and narrowing thence toward the ends, cen-

tral tie-pieces *b, b*, end ties *f*, side-bearings *e*, plate *c*, and center-bearing plate *d*, substantially as described.

5 A truck bolster, combined with interchangeable bolster column guide plates having seats of different elevation, substantially as described.

10 6. A truck bolster column guide plate having an inwardly projecting teat adapted to be fitted to a bolster to take off the shearing strain from the fastening, substantially as described.

7. A bolster column guide plate having an

elevated column seat and adjacent ribs or beads therefor, whereby a bolster of minimum or deficient width may be increased in width to adapt it to interchange with a bolster of greater width, substantially as described.

In testimony whereof I have hereunto set my hand this 8th day of June, A. D. 1894.

CHARLES T. SCHOEN.

Witnesses:

G. WHITNEY WOOD,
E. A. SCHOEN.