No. 635,992. Patented Oct. 31, 1899.

W. P. BETTENDORF.

CAR TRUCK BOLSTER.

(Application filed Feb. 17, 1899.)

(No Model.)

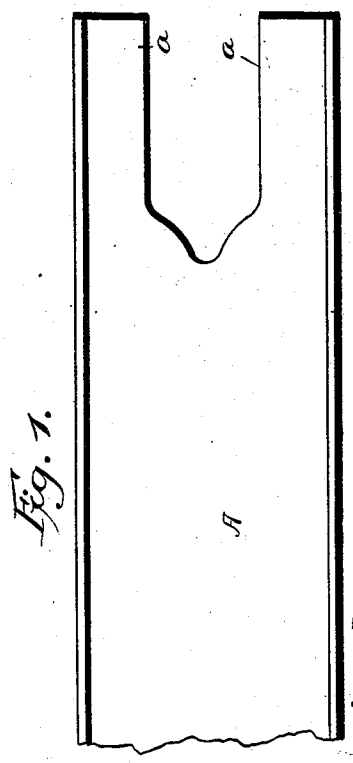

Fig. 1.

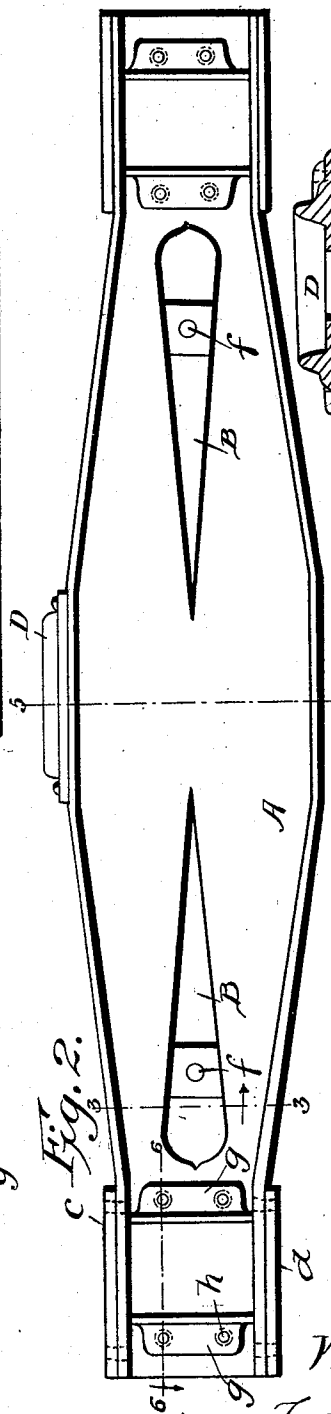

Fig. 2.

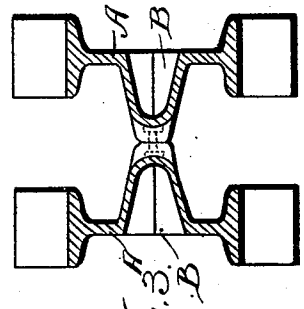

Fig. 3.

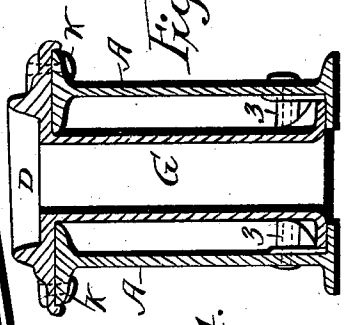

Fig. 5.

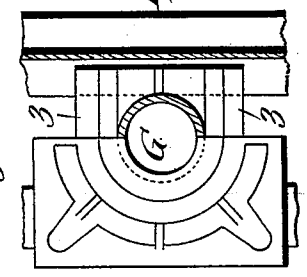

Fig. 4.

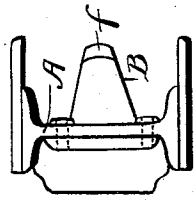

Fig. 7.

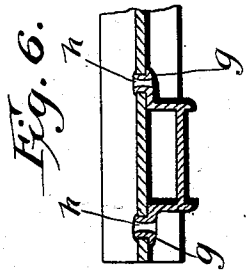

Fig. 6.

Witnesses
A. Roy Appleman Jr
M. Schley

Inventor,
W. P. Bettendorf.
Frank D. Thomason
Attorney

By

UNITED STATES PATENT OFFICE.

WILLIAM P. BETTENDORF, OF DAVENPORT, IOWA.

CAR-TRUCK BOLSTER.

SPECIFICATION forming part of Letters Patent No. 635,992, dated October 31, 1899.

Application filed February 17, 1899. Serial No. 705,759. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM P. BETTENDORF, a citizen of the United States, and a resident of Davenport, in the county of Scott and State of Iowa, have invented certain new and useful Improvements in Car-Truck Bolsters, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The object of my invention is to make a truss-shaped bolster for car-trucks out of a commercial form of flanged metal beam and to so manipulate the same as to produce a strong, durable, and economical bolster. This I accomplish by suitably cutting away a portion of the web of the beam at each end and by upsetting the same by a lateral displacement in such manner as to bend the flanges and make them converge toward each other at both ends of the bolster and by otherwise constructing the bearing-plate and the guide-blocks of the beam so as to secure lightness, economy, and strength, substantially as hereinafter fully described and as illustrated in the drawings, in which—

Figure 1 shows a side view of about one-half of the blank from which the improved bolster is constructed. Fig. 2 shows a side elevation of the completed bolster. Fig. 3 is a transverse vertical section taken on dotted lines 3 3, Fig. 2, looking in the direction indicated by the arrows. Fig. 4 is a plan view of the central portion of the bolster with the ends thereof broken away and showing one-half of the bearing-plate and the truss-frame in horizontal section. Fig. 5 is a transverse vertical section of the complete bolster, taken on dotted line 5 5, Fig. 2. Fig. 6 is a horizontal transverse section of the separated end of one of said truss-frames, taken on dotted line 6 6, Fig. 2. Fig. 7 is an end view of one of said truss-frames.

In the drawings, A represents a blank made of an I-beam of suitable dimensions, having corresponding central portions of its web cut away at each end, so as to bifurcate or divide the same into two corresponding end extensions *a a*. The length of these extensions correspond to the length of the end portions of the bolster to which the guide-blocks are secured, and they are the same width from their ends to near their crotch, at which latter point their inner edges curve toward the center of width of the beam and merge into said crotch. After these extensions are formed the blank is placed between suitable dies, and a longitudinal central groove B is made in each half by pushing in or depressing the metal on one side of the web and bulging it out to a corresponding extent on the opposite side. These grooves commence at a point near the center of length of the beam midway between its flanges and get gradually deeper and wider until they reach their outer terminus, as shown. The making of these grooves B draws the longitudinal sides of the beam toward each other and causes the flanges of the beam on either side of the central portion, upon which the female bearing-plate is superimposed, to bend and converge toward each other and brings the inner edges of the extensions *a* of the blank together their entire length, so that they can be welded or otherwise secured together to form ends for the truss-frame, to the web of which the guide-block C is secured and to the parallel flanges of which the upper buffer-plate *c* and the under spring-plate *d* are riveted or otherwise secured.

While one truss-frame constructed as hereinbefore described could be made to answer, yet I prefer to make the bolster of two of them of corresponding shape and dimensions and to arrange and secure them parallel to each other. This I accomplish independent of plates *c* and *d* and the female bearing-plate D by moving said truss-frames together until the convex side of the grooved part of the web of each truss-frame opposite the deepest point of the grooves B therein bear against each other and then driving a rivet through the webs of the truss-frames where they come in contact and heading the rivet in the bottom of said grooves. Securing said frames so that their flanges would be as near together as this method of riveting them would bring them might not be desirable for bolsters for some trucks, so I have a simple construction of the bottom of said groove, whereby the space between the flanges of the parallel truss-frames may be increased. This consists in providing each groove B at or near the point of its greatest depth with a pocket or addi-

tional depression *f*, so as to increase the lateral projection of the bulge or opposite convex side of the web, so that when securing the truss-frames together by a rivet through said pockets their flanges are separated just so much farther apart. The guide-blocks C, instead of being made of solid castings, are preferably made hollow, as shown in Fig. 6, and of malleable castings, and their fastening-lugs *g g* are each provided with tubular lugs *h h*, projecting therefrom, which extend through suitable holes in the web of the end of the frame made to receive the same and have their ends swaged or spread, so as to clench the guide-blocks in position. The female bearing-plate is secured to the truss-frames at their centers of length and connects their upper flanges preferably by means of tubular lugs *k k*, which project downward from the under side of the plate proper and extend through openings in the outer flange of the truss-frames and have their ends swaged to clench said flanges in the same manner that lugs *g* are swaged. The construction and function of this bearing-plate is substantially the same as those now in extensive use, except that it has depending in concentric alinement with the central opening of the plate a tubular portion G, which extends down between the truss-frames to the lower flanges thereof, where its lower end is preferably provided with a circumferential flange that rests on the lower flanges of the truss-frames. The lower end of this depending tubular portion G of the bearing-plate is also provided with a horizontal web just above the plane of its lower extremity, the side edges *m* of which are at right angles to the truss-frames and made tubular. These tubular edges and the remainder of the web extend from web to web of the truss-frames, and, if desired, at each end they may be provided with tubular lugs that will extend through openings in said truss-frames and be swaged and spread to secure said tubular portion G to the truss-frames and, secondarily, to assist in spacing and securing said frames together.

I do not wish to be limited to the construction of the bearing-plate as just described, nor to the construction of the guide-blocks as specified, because it is obvious simpler forms of these parts now in extensive use could be substituted therefor.

What I claim as new is—

1. A bolster for car-trucks consisting of one or more truss-frames, each of which is made of flanged beams originally of substantially the same height throughout their entire length, the web of which is provided with longitudinal grooves, which extend from near the center of length of the same toward and get deeper and wider as they approach the ends of said frame and bend in and draw the flanges so that they converge toward each other as they approach the ends, and a bearing-plate secured to the same.

2. A bolster for car-trucks consisting of one or more truss-frames each of which is made of flanged beams originally of substantially the same height throughout their entire length, a portion of the web of which is cut away at each end and which is provided with longitudinal grooves that extend from near the center of length toward and get deeper and wider as they approach the ends of the frame and bend and draw the flanges of said frame toward each other as they approach the ends, and draw the edges of said cut-away portions of the ends of the web together, as set forth.

3. A bolster for car-trucks consisting of two truss-frames, each of which is provided with corresponding grooves on each side of the center of length thereof made by concaving the metal on one side of the web and convexing it on the opposite: said frames being arranged and secured parallel to each other, at such distance apart that the convex sides of said grooves come in contact, and a bearing-plate secured to said frames.

4. A bolster for car-trucks consisting of two truss-frames, each of which is provided with corresponding grooves on each side of the center of length thereof, made by concaving the metal on one side of the web and convexing it on the opposite, and each of said grooves being provided with a pocket made by further depressing the bottom thereof, said frames being arranged parallel to each other at such distance apart that the convex sides of the pockets of one truss-frame bear against those of the other, and said frames being secured together by extending rivets through said pocket, and a bearing-plate secured to said frames.

5. A bolster consisting of suitable frames, in combination with a bearing-plate, having a tubular extension depending down therefrom and secured to and between said frames both at the top and at the bottom.

WILLIAM P. BETTENDORF.

Witnesses:
HENRY BELLINGHAUSEN,
J. W. BETTENDORF.