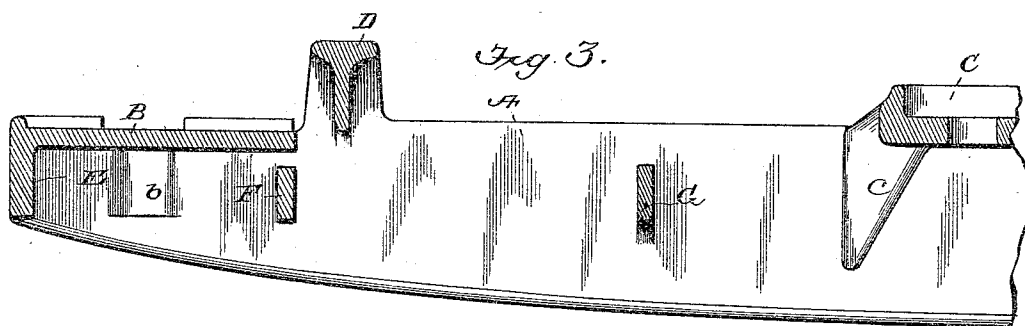
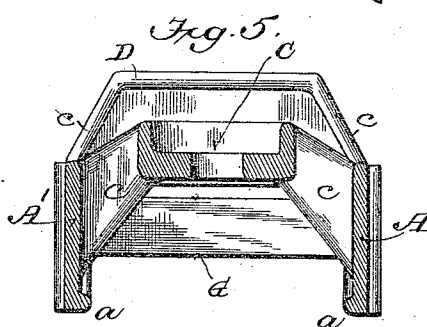
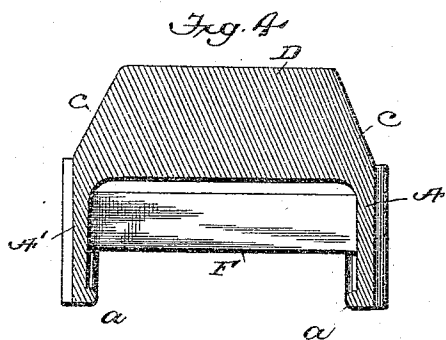
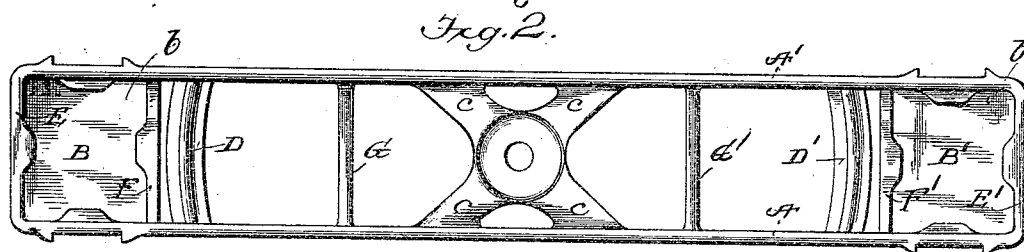
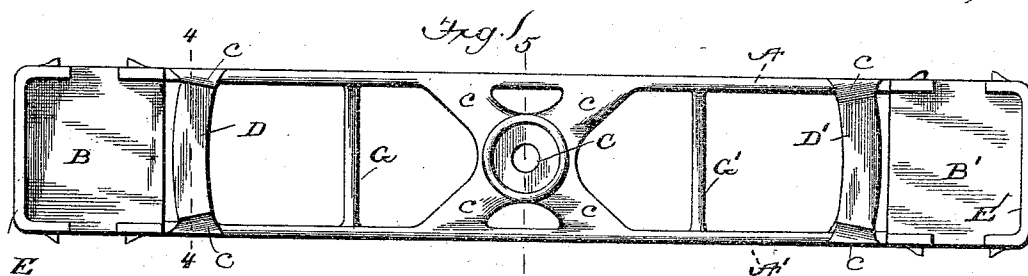


(No Model.)

E. F. GOLTRA.
CAR TRUCK BOLSTER.

No. 543,621.

Patented July 30, 1895.



Witnesses

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UNITED STATES PATENT OFFICE.

EDWARD F. GOLTRA, OF ST. LOUIS, MISSOURI.

- CAR-TRUCK BOLSTER.

SPECIFICATION forming part of Letters Patent No. 543,621, dated July 30, 1895.

Application filed September 2, 1893. Serial No. 484,642. (No model.)

To all whom it may concern:

Be it known that I, EDWARD F. GOLTRA, of St. Louis, Missouri, have made a new and useful Improvement in Car-Truck Bolsters, of which the following is a full, clear, and exact description.

The improvement consists in the special construction, substantially as is hereinafter set forth and claimed, aided by the annexed drawings, making part of this specification, in which—

Figure 1 is a plan of the improved bolster; Fig. 2, a bottom view of the same; Fig. 3, a central vertical longitudinal section, upon an enlarged scale, of a portion of the bolster; Fig. 4, a vertical cross-section on the line 4 4 of Fig. 1, and Fig. 5 a vertical cross-section on the line 5 5 of Fig. 1.

The same letters of reference denote the same parts.

The body of the improved bolster consists substantially of a pair of longitudinally-extended parallel or substantially parallel girders A A', suitably connected to form a rigid structure. At its ends respectively the bolster-body is provided with or constructed to form suitable spring-seats B B'.

C represents the center bearing and D D' the side bearings, which are sustained by the bolster-body. The bearings may be of any suitable shape consistent with the nature of the improved construction, and they may be attached to or connected with the girders in any desirable manner. They also, in conjunction with the arms c, which unite them to the girders, preferably serve to brace and connect the girders. Other connections may be employed—for instance, the ends E E', which unite the girders at the ends of the bolster—and between the ends of the bolster-body other ties—for instance, the cross-ribs F F' and G G'—may be employed to connect the girders.

At each end of the bolster-body the parts E and F (E' and F') may unitedly form a pocket b for the usual bolster-spring.

The cross-ties referred to may assume any desirable form in cross-section, and the side bearings and also the center bearing may, in cross-section, be of any approved shape.

I prefer for the various parts named the shapes respectively shown; and I preferably

make the entire bolster, including the girders, the bearings, and the cross connections, a single integral casting. By this means a bolster of sufficient strength, but light in weight as compared with the ordinary bolster, is obtained, for it will be seen the top or web heretofore employed in bolsters in the class under consideration is substantially omitted, save that the center and side bearings, so far as they go, substantially take its place. In the preferred form of my bolster these parts when supporting the car-body exert a thrust upon the girders. The center bearing especially cannot well be carried high enough to bear directly downward upon the top of the girders. The strain imposed upon it when in use tends more or less to spread the girders.

For some purposes it is undesirable for the parts G and F, &c., to be directly integral with the bolster-bearing or any portion of the bolster top or web, but to have said parts serve as ties only; but for casting purposes it is better to have them integral with the girders. Accordingly, while directly integral with the girders they are separate from the bolster-bearings or other portion of the bolster top or web. In carrying out this feature of the improvement, the ties referred to may be arranged at any preferred elevation upon the girders, and they may be directly under the bolster-bearings or other portion of the bolster top or web, or they may be arranged out of line vertically with the bearings or top portions. I prefer the last-named arrangement, as thereby the bolster may be more readily made, and I prefer to arrange the ties well down upon the girders, all substantially as shown.

So far as the last-named feature of the improvement is concerned—namely, the separation of the girder-ties from the bolster top or web—the bolster-bearings may be attached either directly to the girders or to a top or web, which in turn is attached to the girder. The girders are preferably thickened or flanged at the lower portion thereof, as shown at a, in case increased carrying capacity is required. A leading feature of the improvement is the provision for largely, if not entirely, obviating the need of reinforcing the girders, especially at the middle lower portion thereof, to prevent cracks or checks

therein when the bolster is a casting. This is accomplished by omitting from the bolster any top or web, or so much thereof as may be necessary, and thereby doing away with
 5 an element which, in other forms of cast bolsters in the class under consideration, operates, in the founding of the bolster, to strain the girder at the lower part thereof and cause the cracks and checks referred to. The present bolster, as seen, is substantially a skeleton one. With the exception of the bearings and spring-seats, nothing answering to a top or web is shown, and practically the girders are free to shrink in cooling. Owing to this
 15 omission of a top or web it becomes desirable to employ cross ties or ribs to connect the girders below the level of the bearings, and for this purpose the ties F and G, above mentioned, answer acceptably.

20 I have further ascertained, in the construction of car-truck bolsters in which sides or girders and a top provided with projections for or in connection with the usual bearings are used and all in the form of an integral
 25 casting, that there is difficulty in forming the bolster top or web when underneath brackets, corner-pieces, or cross-ribs integral with said top or web, as well as with said side or girder, are employed. The top or web in cooling
 30 shrinks excessively, and this necessary shrinking is interfered with when the top or web has integral projections on its under as well as upon its upper side. Accordingly, I separate the cross-pieces F G, &c., from any
 35 portion of the overhead web or top. The advantage of this feature of the improvement increases with the length of the top or web. The preferable form of girder is shown, it being straight, or substantially straight, at its
 40 upper edge, and its lower edge being curved downward, and the girder being deepest at its center.

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

45 1. In a cast car truck bolster, the combination of the girders, center bearing, and cross ties, said girders, bearing and cross ties being integral and said cross ties being integral with said girders but being separate from
 50 said bearing or other portion of the bolster top or web, substantially as described.

2. A skeleton car truck bolster consisting of girders, center bearing, side bearings and cross ties connecting the girders, the cross ties
 55 being separated from the bearings by intervening spaces, said parts being integral throughout.

3. A skeleton car truck bolster, consisting

of girders, center bearing, side bearings and cross ties connecting the girders, the cross ties being separated from the bearings by intervening spaces, and themselves consisting of vertical bracket webs, said parts being integral throughout.

4. A skeleton car truck bolster, consisting of girders, center bearing, side bearings and cross ties connecting the girders, the cross ties being separated from the bearing by intervening spaces, and the girders being flanged at their lower edges, said parts being integral
 70 throughout.

5. A skeleton car truck bolster consisting of girders carrying center bearing, side bearings and distance tie pieces, said girders being ribbed or flanged longitudinally, and
 75 deeper toward their middle than at their ends.

6. A skeleton bolster, consisting of girders, center bearing, and side bearings, and supporting arms extending from the girders and sustaining the center bearing.
 80

7. A skeleton bolster composed of girders, center bearing, side bearings, and transverse tie pieces which connect the girders but not the center and side bearings, the girders tapering upwardly from their middle toward
 85 their ends.

8. A skeleton bolster composed of girders, center bearing, side bearings, and transverse tie pieces which connect the girders but not the center and side bearings, the girders
 90 tapering upwardly from their middle toward their ends, and being flanged at their lower edges.

9. A skeleton bolster composed of girders, center bearing, side bearings, and transverse
 95 tie pieces which connect the girders but not the center and side bearings, the girders tapering from their middle toward their ends.

10. A skeleton bolster composed of girders, center bearing, side bearings, and transverse
 100 tie pieces which connect the girders but not the center and side bearings, the girders tapering from their middle toward their ends, and being ribbed or flanged.

11. A skeleton frame for car bolsters, consisting of girders, flanged or ribbed longitudinally and carrying center and side bearings, in combination with auxiliary distancing means uniting said girders and spacing them
 110 apart.

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

EDWARD F. GOLTRA.

Witnesses:

C. D. MOODY,

WM. H. DELACY.