No. 627,348. Patented June 20, 1899.

S. OTIS.

BOLSTER.

(Application filed Oct. 17, 1898.)

(No Model.)

Fig. 1.

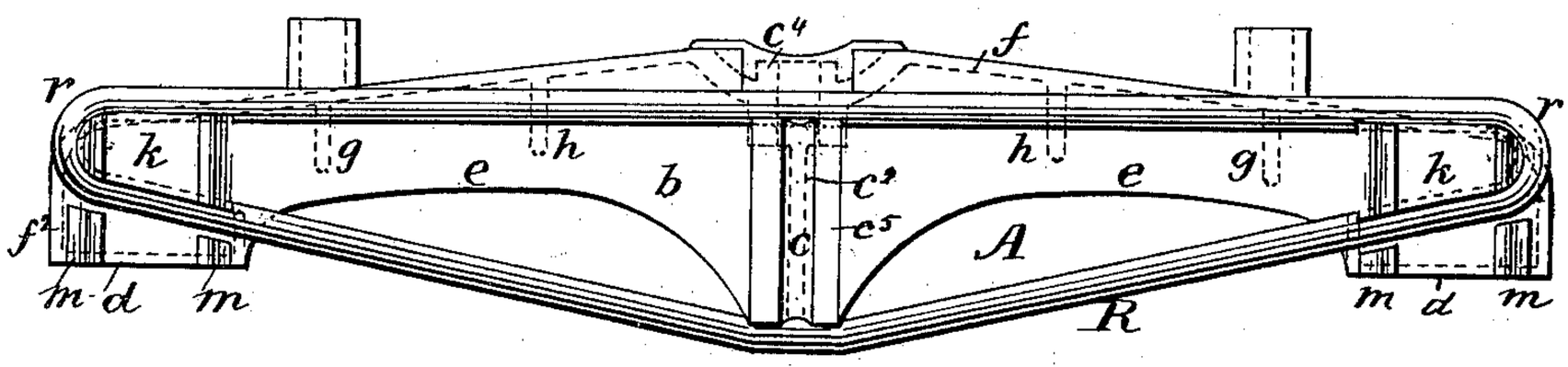


Fig. 2.

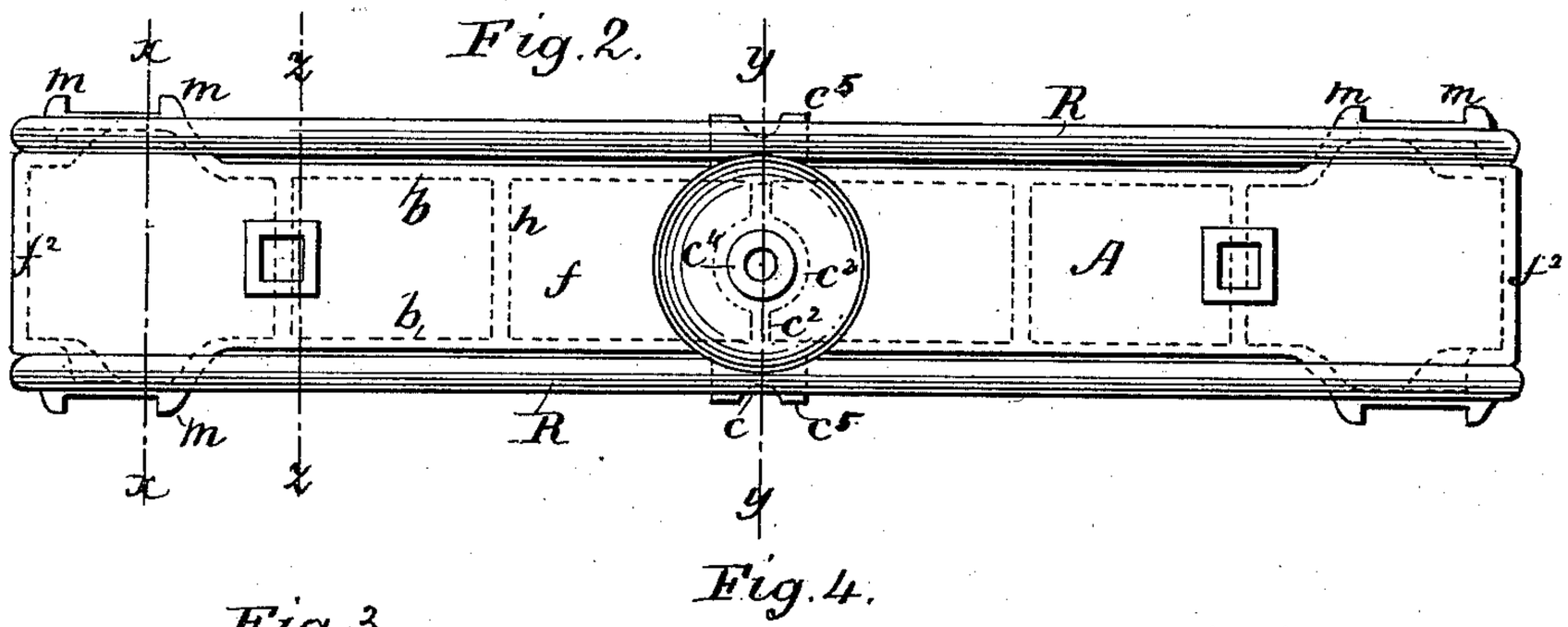


Fig. 3.

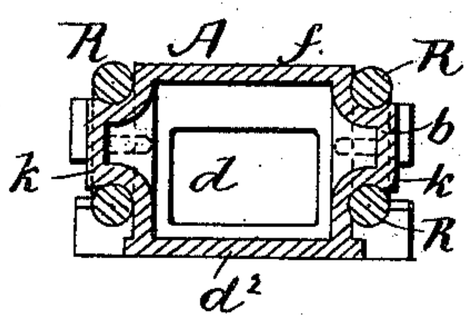


Fig. 4.

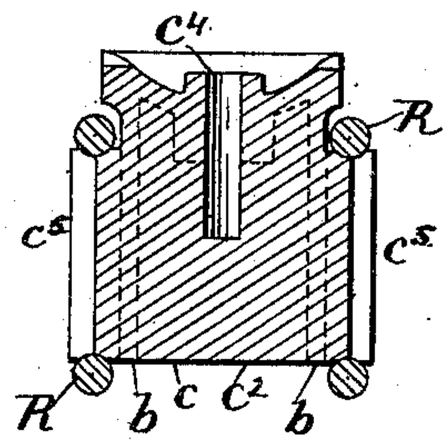
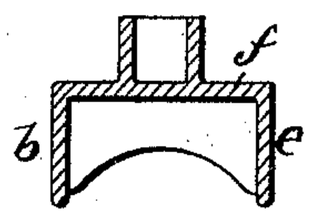


Fig. 5



WITNESSES

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SPENCER OTIS, OF OMAHA, NEBRASKA.

BOLSTER.

SPECIFICATION forming part of Letters Patent No. 627,348, dated June 20, 1899.

Application filed October 17, 1898. Serial No. 693,786. (No model.)

To all whom it may concern:

Be it known that I, SPENCER OTIS, a citizen of the United States, residing at Omaha, in the county of Douglas, State of Nebraska, have invented certain new and useful Improvements in Bolsters, of which the following is a specification, reference being had therein to the accompanying drawings.

One object of my invention is to provide a bolster suitable for a car-truck, which will be a permanent and unyielding structure and at the same time lighter in weight and less expensive for a given strength than cast-metal bolsters, another object being to provide, with a cast-iron or malleable-iron or other cast-metal compression member of comparatively light weight, two tension members in the form of looped wrought-metal rods shrunk upon lugs, which may constitute saddles projecting from the sides of the compression member; but said rods or tension members may be set in place in a mold and the cast member be run in, in either case forming perfect and unyielding connection of said members not depending on the shearing strength of either bolts or rivets, but distributing the strains over the entire sectional area of the tension members, while permitting the compression member to have in one casting the center-plate side bearings, spring-seat, and column-guides, as required. I attain these objects by the construction illustrated in the accompanying drawings, in which—

Figure 1 is a side view of a bolster constructed in accordance with my invention. Fig. 2 is a top view of the same. Fig. 3 is a transverse section of the same on line $x\ x$ of Fig. 2. Fig. 4 is a transverse section on line $y\ y$ of Fig. 2. Fig. 5 is a transverse section on line $z\ z$ of Fig. 2.

Although the compression member A of the bolster consists of a single casting, I will give the name "plates" to its different portions to facilitate the description. Said compression member has two side plates b, deeper in the middle of their length at c than at d, where the end bearings are formed, and still less deep at e between said middle portion and the end bearings. The side plates are united together centrally by a vertical web c^2, the central portion of which is reinforced at c^3 and has a central vertical cavity c^4 to receive the king-bolt of the truck. The compression member has a top plate f extending the whole length thereof and closing also its ends f^2. The bottom of the end bearings have also plates d^2, that unite together the side plates b. Said side plates and the top plate f are additionally united together by transverse webs $g\ h$ on each side of the central web c^2.

The tension members of the bolster consist of two endless rods R, preferably of cylindrical form in cross-section, although they may be square or polygonal in cross-section. Each rod R is partly folded upon itself to provide two loops r at a distance from each other substantially equal to the length of the bolster, the component cords uniting said loops r being farther apart in the center of the length of said tension members. To properly retain the tension members connected with and securely mounted upon the sides of the compression member, the latter is provided with ribs c^5 in the center of its sides, and the top and bottom of said ribs are concaved horizontally to constitute saddles for the top and bottom portions of the tension members. Upon the sides of the compression member, adjacent to its ends, there are also hollow ribs k, Fig. 3, the top and bottom of which are concaved to form saddles for the looped portions r of the rods R. Adjacent to the ribs k the sides of the member A are provided with column-guides m, as required.

After the compression member has been cast and the endless tension-rods R have been given the proper form and provided with their contracted end loops, said rods are heated to expand them and immediately seated in the saddles formed therefor on the sides of the compression member A, and thus an unyielding bolster of great strength is obtained; but, if preferred, the tension members or rods may be set in position in the mold and the cast-metal compression member be run in alongside of said rods.

Having now fully described my invention, I claim—

1. A car-truck bolster consisting of a compression member of cast metal having projecting from its sides in the center of its length and adjacent to its ends, saddles concaved in the top and bottom, and on the two sides of

said compression member, an endless tension-rod having its central portion and its looped ends in engagement with the side saddles of the compression member, substantially as described.

2. In a car-truck bolster, the combination of a cast-metal compression member having projecting from its sides, saddles concaved in the top and bottom, with endless tension-rods having looped ends in engagement with the side saddles of the compression member, substantially as described.

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

SPENCER OTIS.

Witnesses:

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E. J. PEAKE.