

CAR TRUCK,

Patented Dec. 7, 1909.

3 SHEETS—SHEET 1.

942,048.

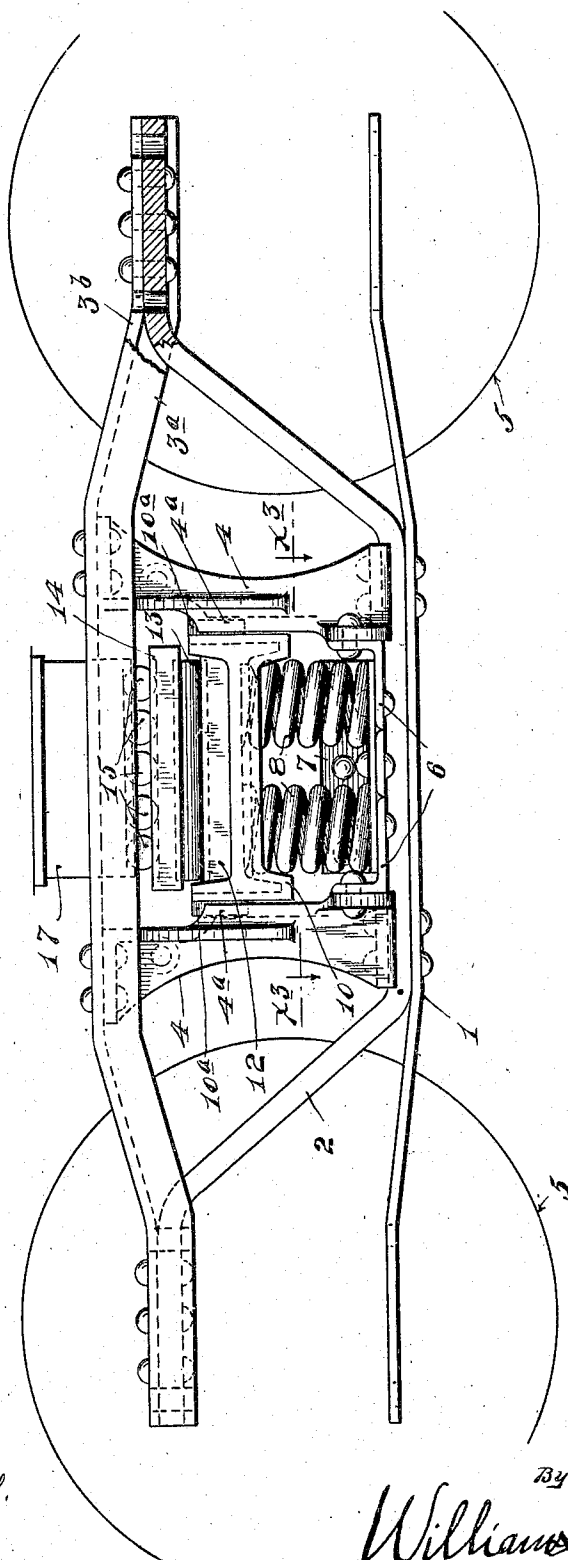


Fig. 1.

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By his Attorneys.

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942,048.

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CAR TRUCK.

APPLICATION FILED OCT. 10, 1907.

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3 SHEETS—SHEET 2.

Fig. 2.

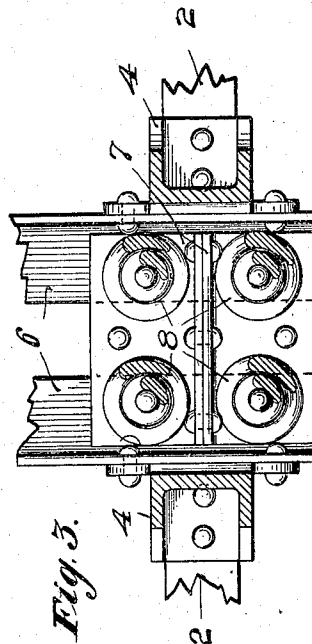
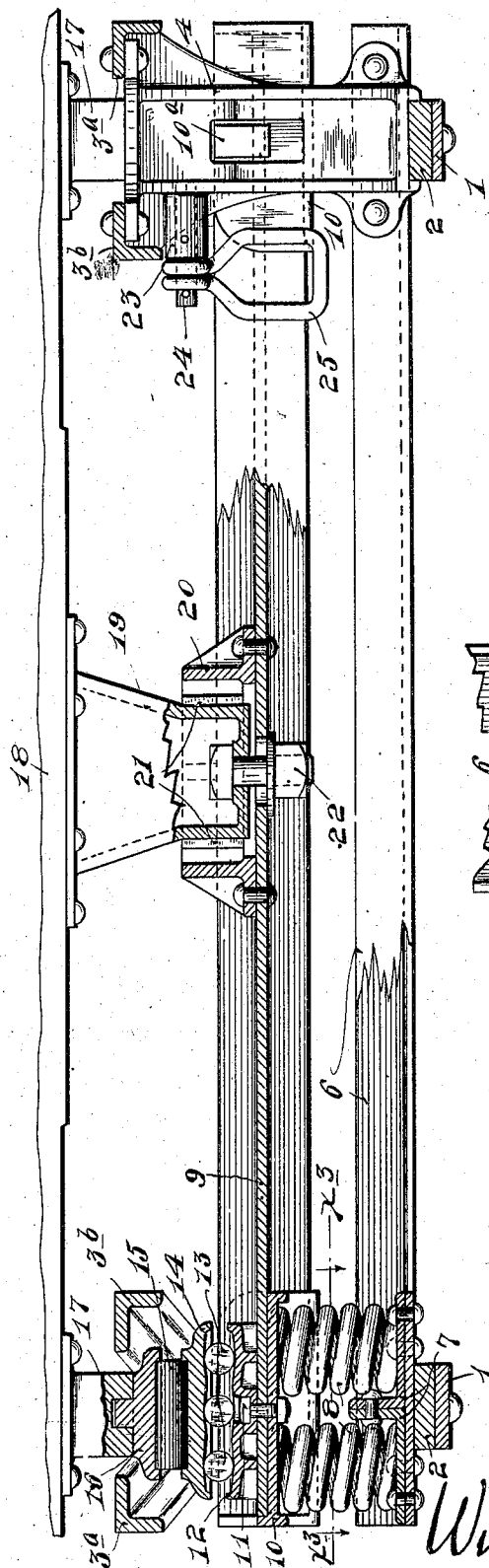


Fig. 3.

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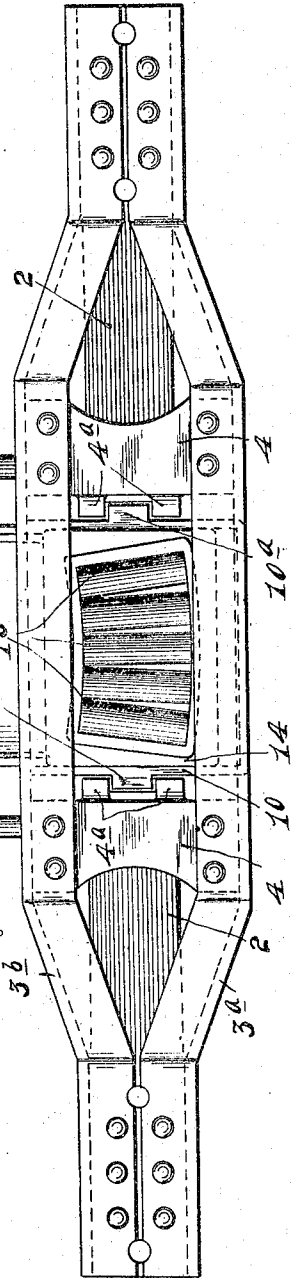
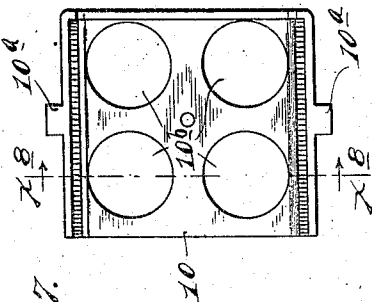
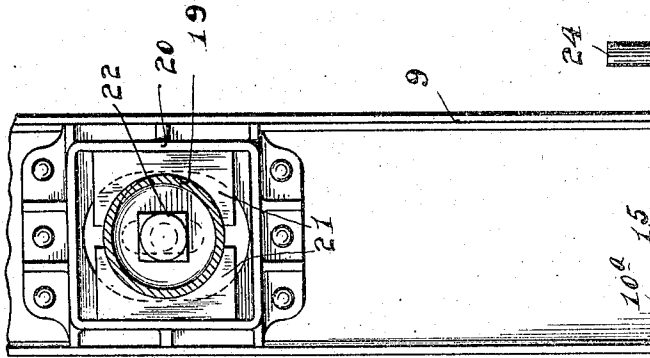
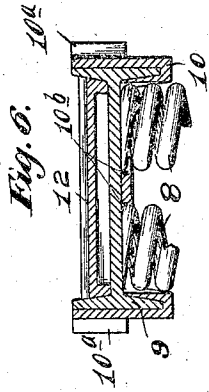
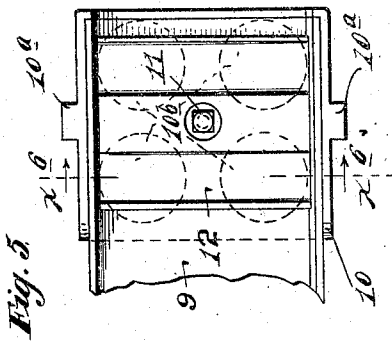
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3 SHEETS—SHEET 3.

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UNITED STATES PATENT OFFICE.

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CAR-TRUCK.

942,048.

Specification of Letters Patent.

Patented Dec. 7, 1909.

Application filed October 10, 1907. Serial No. 396,803.

To all whom it may concern:

Be it known that I, JOHN C. BARBER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Car-Trucks; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to car trucks of the type disclosed in my prior patent 863,012, of date August 13, 1907, and has for its object to improve the construction with a view of greater economy in first cost and greater convenience in the assembling, removal and replacement of parts:

To this end, my invention consists of the novel devices and combinations of devices hereinafter described and defined in the claims.

The invention is illustrated in the accompanying drawings, wherein like notations refer to like parts throughout the several views.

In said drawings; Figure 1 is a side elevation of my improved truck, with some parts removed, some parts in section, and the position of some parts shown in diagram only. Fig. 2 is a view of the truck chiefly in cross section, on the center line of the truck bolster, but with some parts shown in elevation, and others broken away. Fig. 3 is a horizontal section, on the line $x^3 x^3$ of Figs. 1 and 2. Fig. 4 is a plan view of one of the side frames and a portion of the truck bolster, with some parts broken away, and others shown in section. Fig. 5 is a detail, in plan view, showing one end of the truck bolster and the parts immediately connected therewith. Fig. 6 is a detail in cross section, on the line $x^6 x^6$ of Fig. 5. Fig. 7 is a detail showing the combined spring cap and chafing block bolster end casting detached, in plan view; and Fig. 8 is a cross section thereof, on the line $x^8 x^8$ of Fig. 7.

The numeral 1 represents the bottom tie, the numeral 2 the bottom arch bar, the numerals 3^a and 3^b, taken collectively, represent the top arch bar, and the numeral 4 the bolster column casting; which parts, when properly connected together, constitute one of the side frames of the truck. The side frames are supported from the journal boxes (not shown) in the customary

way. The positions of the wheels are indicated by the diagram lines 5. The top arch bar of each side frame is composed of an outer angle bar 3^a and an inner angle bar 3^b set with their horizontal webs uppermost and facing each other. The end portions of the said angle bars are brought close together so as to abut or nearly so, and are riveted or otherwise rigidly secured to the underlying end portions of the bottom arch bar 2, as best shown in Figs. 1 and 4. The central portions of the said angle bars 3^a and 3^b are bent apart from each other and are riveted or otherwise rigidly secured to the bolster column castings 4, as best shown in Figs. 1 and 4, in proper positions to afford clearance between the said parts for the passage therethrough and the proper working therein of certain members of the anti-friction bearing devices, as will later more fully appear.

The bolster column castings 4 are provided with pairs of properly spaced guide flanges 4^a which project toward the center of the bolster space and are of less height than the bolster castings, as best shown in Fig. 1.

The opposite side frames are rigidly connected together by bottom cross ties 6 of angle form, set with their horizontal flanges facing each other and having their opposite ends riveted or otherwise rigidly secured to the opposite pairs of bolster column castings 4. On the end portions of the cross ties 6 are located spring base plates 7 shown as composed of a pair of angle plates set with their vertical flanges abutting, or back to back, and extending on a median line of the underlying arch and tie bars. The rivets connecting these plates 7 with the cross ties 6 serve to center the bolster supporting springs 8 which rest on said plates.

The truck bolster is made up of a main or body portion 9, of less width than the bolster space between the bolster column castings 4 and a removable end casting 10, of the proper construction to embrace the ends of the body portion 9 and thereby build the same out sidewise sufficiently far to make the ends of said casting serve as chafing blocks for coöperation with the bolster columns. As shown, the body portion 9 of the bolster is an I-beam; and the said casting 10 is of such construction as to be capable of being applied and removed endwise to and from the ends of the I-beam. This casting 10 is shown detached, with all parts re-

moved therefrom, in Figs. 7 and 8, and is shown in working position in Figs. 1, 2 and 4. By reference to these views, it will be seen that the casting 10, not only serves to reinforce and build out the ends of the I-beam and to afford chafing blocks for the bolster, but also serves as a cap to the underlying bolster supporting springs 8. It will also be seen that the casting 10 is provided with outwardly extended guide lugs 10^a which work between the pairs of vertical guide flanges 4^a of the bolster columns 4, thus coöperating therewith to guide the bolster in its vertical or spring cushioned movement and to hold the same from any lateral motion or forward and backward motion. When properly applied to the I-beam 9, the casting 10 is rigidly but removably secured thereto by bolts 11, as best shown in Fig. 2. These bolts 11 also secure to the bolster the lower members 12 of the lateral motion bearing plates.

The bolster guide flanges 4^a, being of less height than the columns 4, as hitherto noted, and the I-beam 9 of less width than the narrowest space between said columns, the bolster may be raised until the guide lugs 10^a of the casting 10 rise to a point above the level of the bolster guide flanges 4^a; and, then, by the removal of the bolts 11, the end castings 10 can be removed endwise from the I-beam 9, and, thereafter, the I-beam 9 be withdrawn endwise through the bolster space. This particular feature of the construction is of great service for economy and convenience, in the assembling or removal and replacement of the parts of the truck bolster and anti-friction bearing devices supported therefrom, without taking apart the side frames of the truck. Respecting the said casting 10, it should be further noted that its horizontal web underlies the horizontal web of the I-beam 9 when the parts are in working position. This makes it feasible to secure centering pockets for the upper ends of the underlying springs 8, by simply cutting holes 10^b through the web of said casting 10, as clearly shown in Figs. 7 and 8.

On the lower members 12 of the lateral motion bearing plates are mounted the lateral motion rollers 13; and on these rollers 13 rest the plates 14 which, in turn, carry the radial motion or side bearing rollers 15. Because of their positions and functions, the plates 14 are referred to, in my prior patent 863,012, and in the Lake and Deverell patent 789,350, as floating plates. The radial motion rollers 15 are disposed on the plates 14 crosswise of the lateral motion rollers 13, on lines radial to the center of the truck, as best shown in Fig. 4. On said rollers 15 are mounted the upper members of the side bearings, which in this instance, are shown as composed of pairs of telescoping parts

marked, respectively, 16 and 17, with the lower parts 16 resting on said rollers 15 and the upper parts 17 riveted or otherwise rigidly secured to the body bolster 18. By reference to Figs. 1 and 2, it will be seen that the so-called floating plates 14 are located below the top arch bars of the side frames, and travel laterally with the lateral motion rollers 13; and that the upper members of the side bearings extend upward through and work in the space between the parts 3^a and 3^b of the top arch bars and the pair of column castings 4, to which said parts 3^a and 3^b are secured across the bolster space, as hitherto noted. This space must be sufficient to permit the lateral motion of the body bolster with the underlying floating plates 14 and the lateral motion rollers 13, while, at the same time, permitting the radial motion of the body bolster with the rollers 15 on the faces of said plates 14.

The central connections between the truck bolster 9 and the body bolster 18 are precisely the same as in my prior patent 863,012, being such as to afford freedom for the swiveling action without taking any part of the load from the car body, and also being such as to permit the lateral travel of the body bolster in respect to the truck bolster, while preserving a sufficiently close connection to take the forward and backward thrusts. For this purpose, the body bolster 18 has rigidly secured thereto, the depending swivel plate 19 which telescopes with the underlying plate 20 which is rigidly secured to the truck bolster 9. The plate 20 is of rectangular form in that portion thereof wherein the hub of the plate 19 travels, and is fitted with segmental buffing blocks 21 hugging the hub of the lower plate. The buffing blocks 21 are of less length than the seat for the same in the lower plate 20, the clearance being sufficient for the lateral travel of the body bolster. The two plates 19 and 20 are connected by a nutted king bolt 22 which works in a slot through the web of the underlying bolster, as shown in Fig. 2.

The bolster column castings 4 are shown as provided with socket lugs 23 for brake hanger bearings 24 supporting brake hangers 25, as best shown in Figs. 2 and 4.

Comparing with my prior patent, it will be seen that the lateral and radial motions are the same, but that the side frames and structures for supporting the anti-friction devices providing for these motions have been modified and improved for the purposes hereinbefore named.

What I claim is:—

1. In a car truck, the combination with side frames having bolster columns with vertical guide lug seats, of a truck bolster having a body portion of less width than the

space between the bolster columns, and end castings rigidly but detachably secured to the ends of said bolster and each extended to both sides of said bolster and serving as chafing blocks for the same, and provided with projecting guide lugs working in the vertical seats of said bolster columns.

2. In a car truck, the combination with side frames having bolster columns with vertical guide lug seats, of a truck bolster having a body portion of less width than the bolster space between the columns, an end casting having a horizontal web engaging the under surface of the end portions of said bolster and provided at its ends with vertically extended portions which serve as chafing plates and with projecting guide lugs which latter work in the vertical seats of said bolster columns, means, detachably securing said end castings to said bolster, and springs interposed between said bolster and underlying portions of the truck frame, said horizontal web portion of said end castings being perforated to afford seats for the upper ends of said springs and permitting the upper ends of said springs to directly engage said bolster, substantially as described.

3. In a car truck, the combination with side frames having bolster columns with vertical guide lug seats, of a truck bolster having a body portion of less width than the space between the said bolsters, end castings engaging the under surfaces of the end

portions of said bolster and provided with guide lugs that work in the vertical seats of said columns, roller bases applied to the upper surfaces of the end portions of said bolster, bolts passed through said end castings, bolster and roller bases and detachably connecting the same, springs interposed between said bolster and underlying portions of said truck frame, a body bolster above said truck bolster, and roller bearing devices interposed between said body bolster and said roller bases, substantially as described.

4. In a car truck, having side frames of the arch bar type, the combination with bolster columns having inwardly projecting guide flanges of less height than the columns, of a truck bolster underlying the top arch bars, which bolster has an I-beam body of less width than the narrowest space between said columns, and is provided with endwise removable end castings serving as chafing blocks for the bolster and as caps for the bolster springs, and having outwardly extending guide lugs working between the said guide flanges of said bolsters and removable therefrom at their tops, substantially as described.

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

JOHN C. BARBER.

Witnesses:

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F. D. MERCHANT.