

G. P. RITTER.

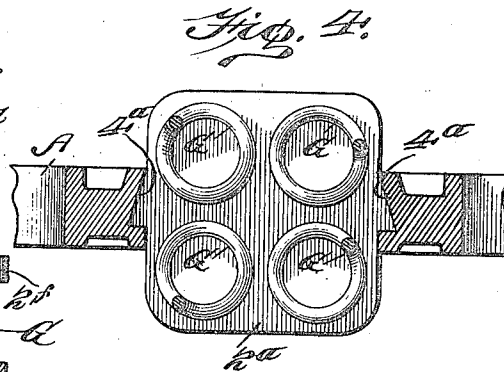
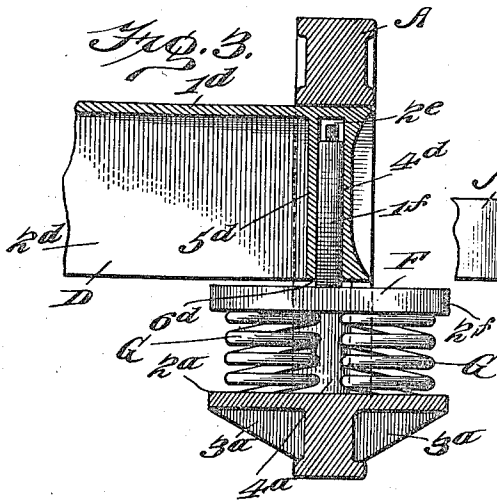
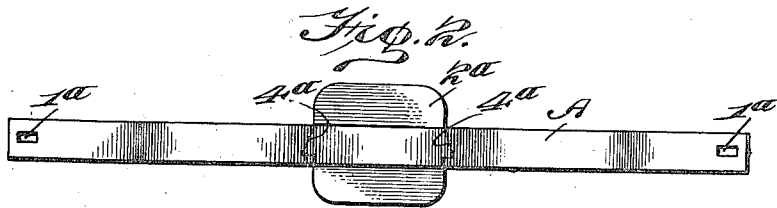
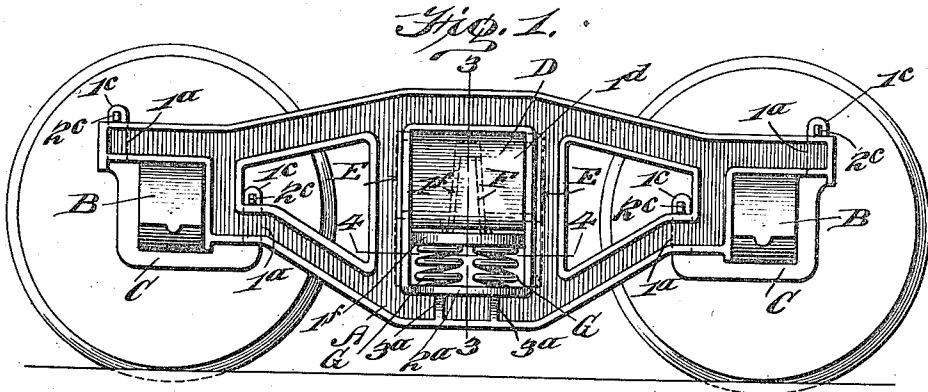
OAR TRUCK.

APPLICATION FILED FEB. 20, 1904.

972,921.

Patented Oct. 18, 1910.

2 SHEETS-SHEET 1.



Witnesses
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CAR TRUCK.

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2 SHEETS—SHEET 2.

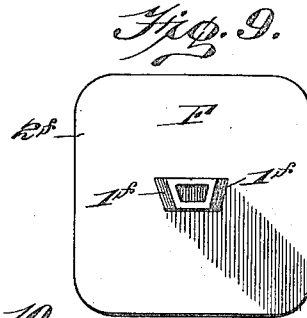
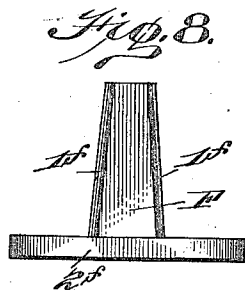
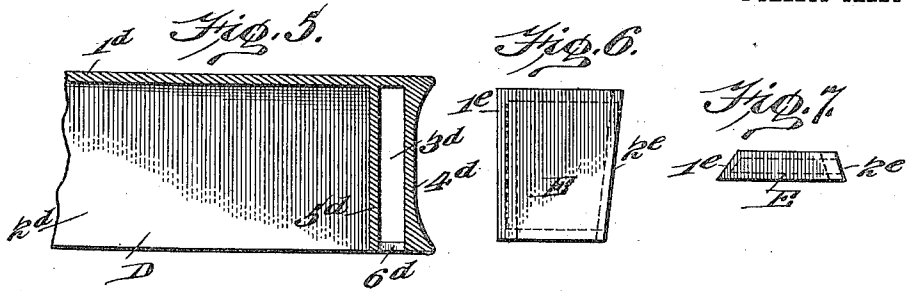


Fig. 10.

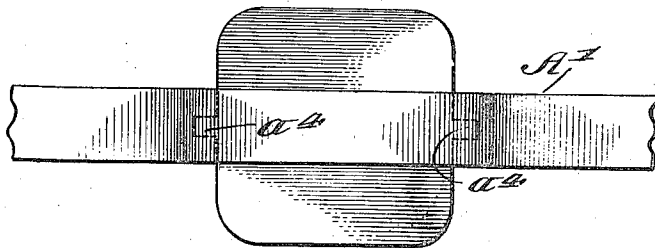


Fig. 11.

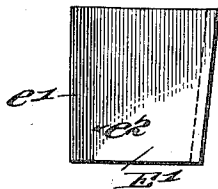


Fig. 12.

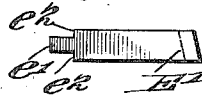
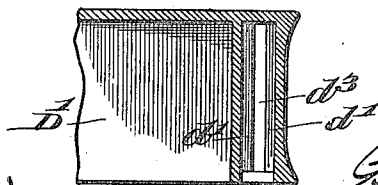


Fig. 13.



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CAR-TRUCK.

972,921.

Specification of Letters Patent.

Patented Oct. 18, 1910.

Application filed February 20, 1904. Serial No. 194,559.

To all whom it may concern:

Be it known that I, GILBERT P. RITTER, 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 hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of a car truck embodying my invention. Fig. 2 is a plan view of one of the side frames. Fig. 3 is an enlarged partial section on the line 3—3, Fig. 1, one side frame and one end of the bolster only being shown, and the spring supported central wedge and the bolster springs being shown in elevation. Fig. 4 is an enlarged partial section on the line 4—4, Fig. 1, portions of the side frame broken away. Fig. 5 is a vertical central section of one end of the bolster. Fig. 6 is a side elevation of one of the bolster guide members. Fig. 7 is a plan view of the bolster guide member shown in Fig. 6. Fig. 8 is a side elevation of the central wedge and upper spring seat. Fig. 9 is a plan view of the central wedge and upper spring seat shown in Fig. 8. Fig. 10 is a plan view of a portion of a modified form of side frame. Fig. 11 is a side elevation of a modified form of bolster guide member designed for use with the side frame shown in Fig. 10. Fig. 12 is a plan view of the modified form of bolster guide member shown in Fig. 11. Fig. 13 is a vertical central section of one end of a modified form of bolster adapted for use with the modified form of bolster guide members illustrated in Figs. 11 and 12. Like symbols refer to like parts wherever they occur.

My invention relates to the construction of trucks for railway cars, and particularly to the type known as rigid bolster trucks, and has for its objects; first, to provide simple and efficient means for maintaining the relation of the side frames and the bolster in the vertical oscillations of the latter, the bolster guiding means being of such character, construction and arrangement that the side frames and bolster of the truck are maintained in their proper relation with respect to each other by the imposition of

the load upon the bolster, while the truck may be dismantled for purposes of repair with great facility; second, to maintain the bolster and the side frames all in a rigid relation to each other in respect of any horizontal movement; and, third, to temper and control the excessive oscillation of the bolster springs by the frictional action of the bolster guide members upon the side frames.

Generally stated, one feature of my invention embraces a combination wherein laterally separable bolster guide members engage the side frames and move upwardly and downwardly with the bolster in bolster guide ways of the side frames.

A second feature of my invention consists in forming the side frames with horizontally converging bolster guide ways for the reception of the bolster guide members, in such manner that the side frames are rendered horizontally rigid with respect to each other and to the bolster and the oscillations of the bolster springs are reduced in number and amplitude by reason of frictional control.

There are other, minor, features of invention, all as will hereinafter more fully appear.

I will now proceed to describe my invention more fully so that others skilled in the art to which it appertains may apply the same.

Since the truck is of a well known type, and since the construction of each of the side frames is the same, and each end of the bolster and its connection with each of the side frames is identical, I shall describe but one half of the truck.

In the drawings chosen to illustrate my invention, the scope whereof is particularly pointed out in the claims, A is the side frame of a truck which rests at its extremities upon journal boxes B, B of well known construction, said journal boxes being attached to the side frame by detachable stirrups C, C having lugs 1^c, 1^c which pass through openings 1^a of the side frame, the stirrups C, C being retained in position by transverse keys or cotter pins 2^c, which pass through perforations in the lugs 1^c, 1^c thereof; but if desired any other means of securing the journal boxes to the side frame may be employed.

The lower rail of the side-frame is preferably broadened out at the base of the bolster opening therein to form a symmetrically disposed, integral bolster spring-seat 2^a, said spring-seat being strengthened by brackets or ribs 3^a, 3^a if desired, thus avoiding the necessity, as will hereinafter appear, of employing means other than the bolster for maintaining the transverse rigidity of the truck; but, if desired, the bolster spring-seat may be formed independent of the side frame, or the well known spring-plank or sand-plank construction may be adopted in lieu of the enlarged bolster spring-seat whereon the bolster springs are balanced about the side-frame.

Bordering the side walls of the bolster opening, the side-frame is provided with bolster guide-ways 4^a, 4^a for the reception of the bolster guide members, said guide-ways being preferably horizontally converging vertical channels, but may be of other form if desired, as, for example, see the modification, Fig. 10, or the guide-ways may converge slightly vertically, in which event the bolster guide members E would approach each other as the bolster descended, and the central wedge F would cause a compression of the springs G somewhat more rapidly than the action of the bolster otherwise would.

The bolster D, the body portion of which may be constructed in the form of an inverted rectangular channel with cover plate 1^a and depending side walls or webs 2^a, or otherwise if preferred, is provided at its ends with means adapted to receive a plurality of bolster guide members, said means being preferably in the form of a lateral transverse passage 3^a extending horizontally through the bolster and having outer and inner end walls 4^a and 5^a respectively, said passage 3^a being preferably open at the bottom for at least a portion of its length, as at 6^a, in order to permit the introduction of the vertically movable central wedge which expands, or separates, the bolster guide members carried in the passage or channel 3^a.

The laterally adjustable and separable bolster guide members, or wedges, E, which are pocketed in the passage 3^a of the bolster and incased thereby, are preferably formed with one beveled edge or inclined face 1° corresponding to the bolster guide-ways 4^a, 4^a, and with another oppositely beveled edge, or opposed, face 2° which is, or may be, inclined both rearwardly to converge with the face 1° and also downwardly and inwardly, so that the bolster guide member is tapered or inclined from front to rear and from top to bottom. The bolster guide members may be cored to lighten the construction.

Insertible through the opening 6^a which opens into the passage or channel 3^a of the bolster D is the central wedge, or vertically movable member, F, which is a means of separating the bolster guide members E and causing them to engage and coact with the bolster guideways 4^a, 4^a of the side frame, and by which, also, the said bolster guide members are spaced apart and maintained in a fixed relation with respect to each other and with respect to the bolster. The vertically movable wedge F is provided with inclined faces 1', 1' which converge from the base upwardly and diverge from front toward the rear, so that each face 1', 1' corresponds with and engages a face 2° of the bolster guide members E, but if desired the diverging taper of the faces 1', 1' may be omitted, and the corresponding taper of the faces 2° of the bolster guide members will then also be omitted; or, the central wedge element may be inverted, and either integral with or independent of the bolster, in which event the bolster springs will bear upon the bolster guide members. Preferably made integral with the tapered portion of the central wedge F, is the spring-seat, or spring-cap, 2', such spring-seat being of any suitable size and configuration to afford a bearing for the bolster springs and to reciprocate freely in the bolster opening of the side-frame.

The bolster springs, or resilient members, G, which are or may be of well known dimensions and capacity, are interposed between the bolster spring-seat 2^a of the lower rail of the side frame A and the bolster spring-seat, or spring-cap, 2' of the central member F, in such manner that the central wedge F and bolster guide members E are yieldingly supported, and the strains transmitted to the side-frame through the springs G are balanced about said side-frame and no transverse strain is induced in the truck structure from this cause.

The modification illustrated in Figs. 10, 11, 12 and 13 of the drawings differs from the construction shown in the principal figures of the drawings in that the bolster guide-ways a^a, a^a of the modified side frame A¹ have not the inclined converging faces, but are vertical grooves having faces parallel with the similar bolster guideway on the opposite side of the bolster opening. The bolster D¹ of the modification has stop flanges d¹, or their equivalent, which somewhat restrict the openings at the ends of the passage or channel d³ of the bolster, and which engage the shoulders e² of the modified bolster guide members E¹, said bolster guide members E¹ being formed with a vertically extending tenon, or lug, e¹ corresponding with and adapted to engage the bolster guideways a^a, a^a of the side-frame,

and with the shoulders e^2 , e^2 which abut the stop flanges d^1 and thereby limit the outward movement of said bolster guide members. In other respects the construction of the several parts is the same as that of the structure heretofore described.

The construction of the several elements being substantially such as hereinbefore pointed out, the truck will be assembled by securing the journal boxes B to the side frames A by means of the journal box stirrups C, a pair of the bolster guide members E will then be inserted in a retracted position in the channels, or passages, 3^a at each end of the bolster, and the bolster will then be inserted into the bolster openings of the side-frames A. The central wedge F will then be inserted through the opening 6^a in the bottom of the bolster passage 3^a so that each of its inclined faces 1^1 contacts a corresponding face 2^e of the bolster guide members E, the latter being thus forced apart whereby the faces 1^e , 1^e , thereof are caused to engage the corresponding bolster guide ways 4^a , 4^a of the side-frames A, after which the bolster springs G will be interposed between the bolster spring-seats 2^a of the side frames and the spring-seats, or spring-caps, 2^1 of the central wedge element F.

It will be noted that the bolster D will rest upon the tops of the bolster guide members E, and that the load imposed upon the bolster is transmitted through them to the central wedge F and thence to the springs G and side frames, and also to the side-frames by the contact of the bolster guide members E with the side-frames.

It will be noted further, that by reason of the double inclination of the faces 2^e of the bolster guide members E and their engagement with the similarly inclined faces 1^1 of the central member F, the bolster guide members are forced outwardly, to engage the bolster guideways 4^a of the side-frames, and that they are also forced toward the front of the side-frames to directly engage the front end walls 4^a of the bolster, with the result; first, that the excessive oscillation of the bolster is controlled by the friction between said bolster guide members E and the contacting side-frames A, and, second, that the side-frames A are securely maintained at a fixed distance apart and a bolster truck which is rigid transversely is obtained.

In assembling the modified embodiment of my invention, the bolster guide members E^1 will be inserted in the bolster channel 4^3 through the opening in the bottom thereof, which is of sufficient extent for this purpose, and the central wedge element F will be inserted to cause the tenons or lugs e^1 of the said bolster guide-members E^1 to engage the bolster guideways a^2 of the side-

frames A^1 , the shoulders e^2 engaging the stop flanges, or stop lugs, d^1 , d^1 of the bolster D¹ and thus being limited in their outward movement, but if desired the stop flanges d^1 , d^1 may be omitted and the shoulders e^2 , e^2 of the members E^1 may engage the side-frames. In other respects the assembling of this form of truck is the same as that previously described.

Obviously my invention is susceptible of many modifications without departing from the spirit thereof, and I therefore desire it to be known that the illustrated embodiment of my invention is but a single form thereof, the scope of which is defined by the claims.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. In a car truck, the combination with side frames, of a bolster, a spring, a plurality of bolster guide members, and a vertically movable wedge interposed between said spring and said bolster guide members, substantially as and for the purposes specified.

2. In a car truck, the combination with side frames provided with vertical bolster guide-ways, of a bolster, a plurality of wedge shaped bolster guide members, and a wedge engaging said bolster guide members, substantially as and for the purposes specified.

3. In a car truck, the combination with side frames, of a bolster, a vertically movable wedge, and a plurality of downwardly movable yieldingly supported bolster guide members which engage said side frames, substantially as and for the purposes specified.

4. In a car truck, the combination with side frames, of a bolster, a yieldingly supported wedge independent of said bolster, and a plurality of downwardly movable bolster guide members acted on by said wedge, substantially as and for the purposes specified.

5. In a car truck, the combination with side frames, of a bolster, a plurality of yieldingly supported bolster guide members, and means operative by the load imposed on said bolster adapted to cause said bolster guide members to expand and thereby engage the side frames, substantially as and for the purposes specified.

6. In a car truck, the combination with side frames provided with bolster guideways, of a bolster, means for yieldingly supporting said bolster to permit it to move vertically, laterally movable bolster guide members, and means for retaining said bolster guide members in fixed relation with respect to said bolster, substantially as and for the purposes specified.

7. In a car truck, the combination with

side frames, of a bolster, yieldingly supported downwardly movable members each having an inclined face, and means acting on said inclined faces whereby said downwardly movable members engage the side frames, substantially as and for the purposes specified.

8. In a car truck, the combination with side frames provided with bolster guide-ways, of a bolster, springs for supporting said bolster, downwardly movable bolster guide members each having an inclined face, and means acting on said inclined faces whereby said bolster guide members coast with the bolster guide-ways of said side-frames, substantially as and for the purposes specified.

9. In a car truck, the combination with the side frames, of a bolster, a plurality of yieldingly supported adjustable bolster guide members for each end of the bolster, and means whereby said bolster guide members may be immovably fixed with respect to each other, substantially as and for the purposes specified.

10. In a car truck, the combination with side-frames provided with bolster guide-ways, of a bolster, springs for supporting said bolster, bolster guide members, and means operative by the load for retaining said bolster guide members in engagement with the side frames, substantially as and for the purposes specified.

11. In a car truck, the combination with side frames, of a bolster, laterally movable yieldingly supported wedge members, and means for retaining said wedge members in fixed relation with respect to said bolster, substantially as and for the purposes specified.

12. In a car truck, the combination with side frames, of a spring supported bolster, and a plurality of bolster guide members adapted to be relatively fixed with respect to each other by the action of the load imposed on said bolster, substantially as and for the purposes specified.

13. In a car truck, the combination with side frames, of a spring supported bolster, a plurality of bolster guide members, and means operative by the load whereby said bolster guide members are caused to engage the side frames, substantially as and for the purposes specified.

14. In a car truck, the combination with side frames provided with horizontally converging vertical bolster guide-ways, of a bolster, springs for supporting the bolster, a plurality of wedge shaped bolster guide members, and means whereby said bolster guide members engage the side-frames, substantially as and for the purposes specified.

15. In a car truck, the combination with

side frames, of a bolster, and a plurality of yieldingly supported downwardly movable wedges engaging said side frames, substantially as and for the purposes specified.

16. In a car truck, the combination with side frames, of a bolster, springs for supporting said bolster, a downwardly movable bolster guide member, and a vertically movable wedge independent of said bolster, substantially as and for the purposes specified.

17. In a car truck, the combination with side frames, of a bolster, a plurality of wedges movable downwardly with said bolster, and a yieldingly supported vertically movable wedge interposed between said downwardly movable wedges, substantially as and for the purposes specified.

18. In a car truck, the combination with the side-frames, of a bolster, a plurality of downwardly movable relatively adjustable bolster guide members for each end of the bolster, and resilient members interposed between said bolster guide members and the side-frames, substantially as and for the purposes specified.

19. In a car truck, the combination with side frames, of a bolster, a plurality of downwardly movable bolster guide members which are relatively movable with respect to said side-frames and said bolster, and resilient members interposed between said bolster guide members and the side frames, substantially as and for the purposes specified.

20. In a car truck, the combination with side frames, of a bolster provided at its ends with means adapted to receive a plurality of bolster guide members, a plurality of bolster resiliently-supported guide members, and means interposed between the side frames and the ends of the bolster and operative by the load whereby said bolster guide members are caused to maintain the side frames and bolster in operative relation with respect to each other, substantially as and for the purposes specified.

21. In a car truck, the combination with side frames, of a bolster, a plurality of bolster guide members for each end of the bolster, said bolster guide members being fixed relative to the said bolster throughout the movement of the latter, and means operative by the load imposed on said bolster whereby the said side frames and bolster guide members are maintained in contact with each other, substantially as and for the purposes specified.

22. In a car truck, the combination with side frames, of a spring supported bolster, and guiding means for the bolster maintained in operative relation with the latter by the imposition of the load, said guiding means engaging bolster guideways which

are immovably fixed with respect to the side frames.

23. In a car truck, the combination with the side frames, of a bolster, springs for supporting the bolster, bolster guide members removably mounted on said bolster and engaging said side frames, and means for maintaining said bolster guide members in position on said bolster, said bolster guide

members being movable toward and from 10 their respective side frames.

In testimony whereof I affix my signature, in presence of two witnesses this twentieth day of February 1904.

GILBERT P. RITTER.

Witnesses:

WM. E. DYRE,
HUGH M. STERLING.