

May 9, 1933.

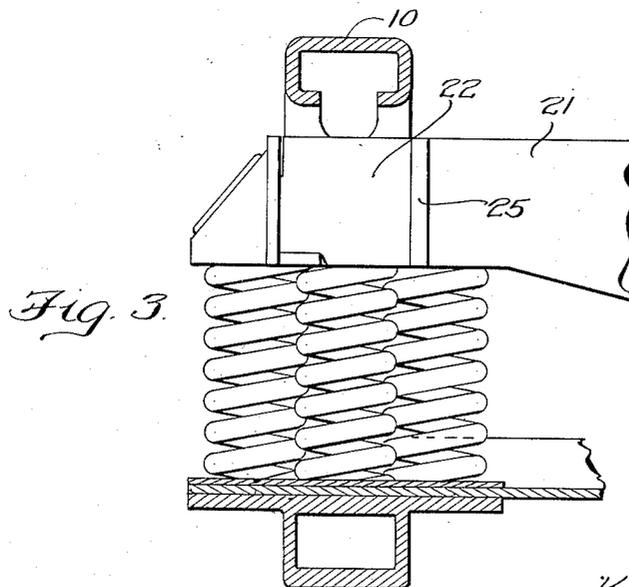
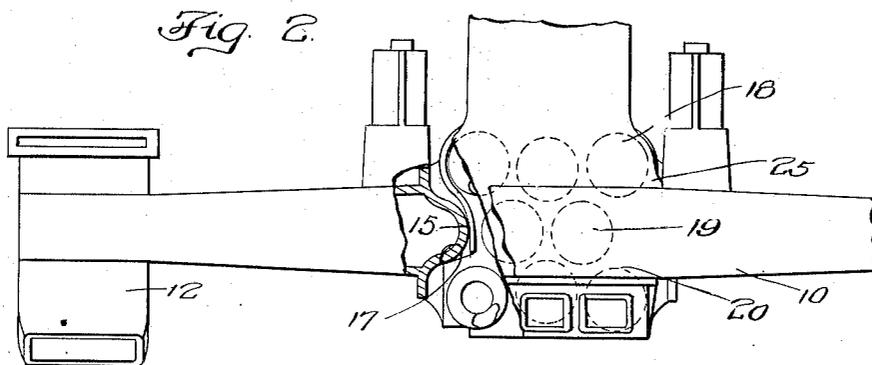
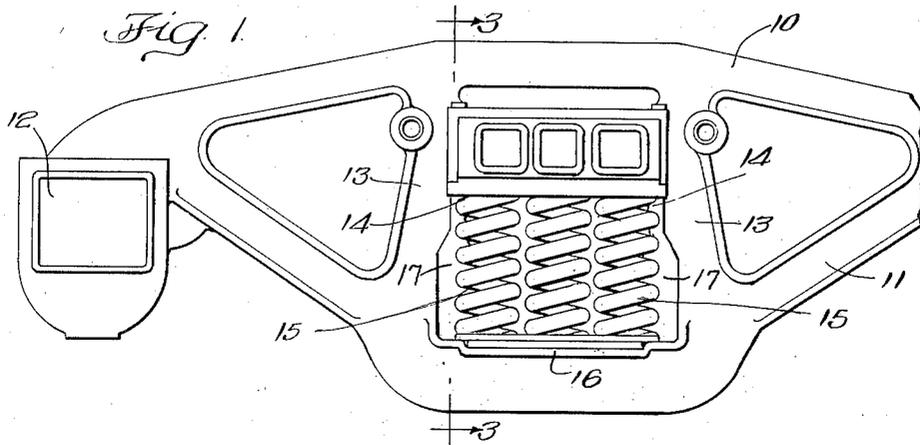
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1,907,962

RAILWAY CAR TRUCK

Filed May 23, 1929

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

Fig. 4.

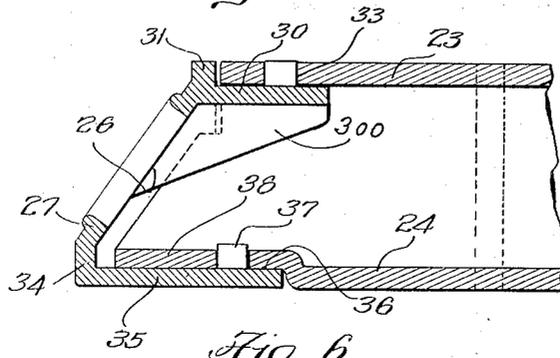


Fig. 6.

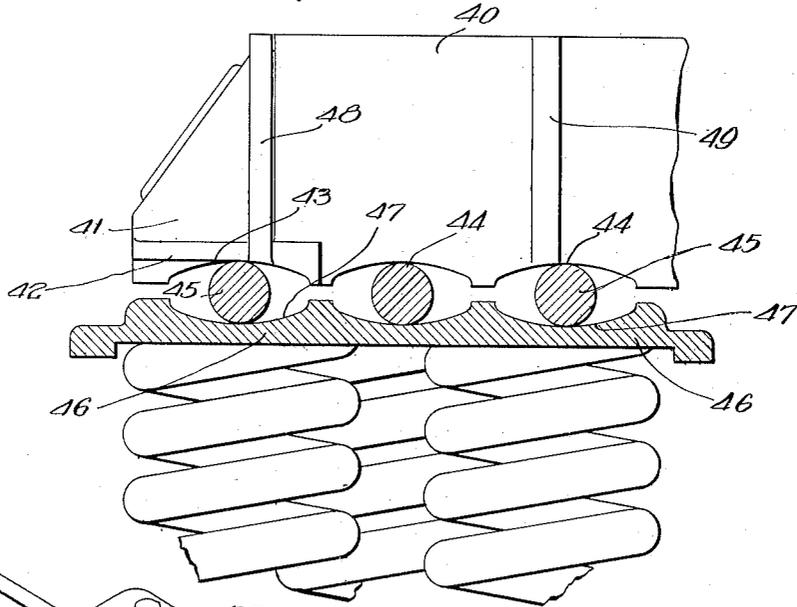
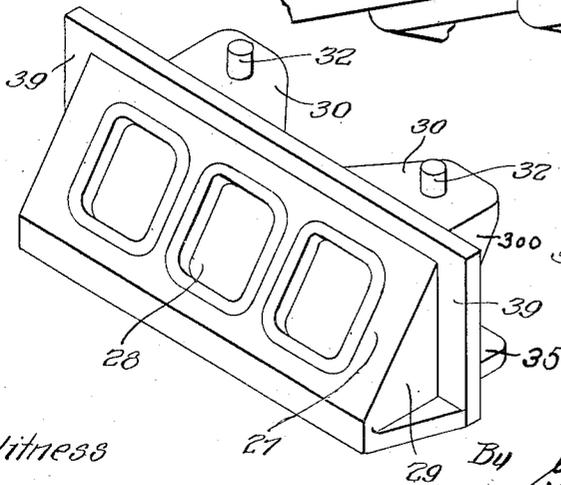


Fig. 5.



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UNITED STATES PATENT OFFICE

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RAILWAY CAR TRUCK

Application filed May 23, 1929. Serial No. 365,279.

This invention relates to railway car trucks.

An object of the invention is to provide a railway car truck having compression, tension, guide column and spring seat members arranged to define a window opening smaller at the bottom than at the top, to reduce the beam effect of the spring seat, wherein a bolster is provided for endwise insertion between the upper portions of the guide columns, and wherein the bolster has a detachable end portion provided with retaining means for limiting endwise movement of the bolster.

A more particular object of the invention is to provide a truck construction of the character described, wherein the detachable end portion of the bolster is provided with means adapted to interlock in the bolster in such manner that when the parts are in position said end portion is maintained against detachment and provides retaining members for preventing detachment of the bolster with reference to the side frame.

It is also an object of the invention to provide a detachable portion of the bolster of the character indicated wherein said portion is provided with lateral motion roller seat means for cooperation with the rollers of a truck of this type.

Other and further objects of the invention will more clearly appear from the description and claims hereinafter following.

In the drawings forming a part of this specification, Figure 1 is a side elevational view of a side frame and bolster construction embodying the invention. Figure 2 is a top plan view, partly in section, of the construction disclosed in Figure 1. Figure 3 is a vertical sectional view, partly in elevation, corresponding substantially to the line 3—3 of Figure 1. Figure 4 is an enlarged, vertical, sectional view through one end of the bolster and showing the detachable end piece thereof. Figure 5 is an enlarged perspective view of the detachable end portion of the bolster. Figure 6 is a fragmentary, part elevational, part sectional view, showing the invention used in connection with a lateral motion truck.

The drawings illustrate only one side portion of the truck contemplated by the invention, including one side frame and co-operating end portions of the bolster and spring plank, but it will be understood that the opposite side of the truck is of the same construction as that shown in the drawings.

The side frame utilized in connection with the invention, preferably includes a compression member 10 and a tension member 11 which converge at their ends and are connected to the journal boxes indicated at 12. Guide columns 13—13 are provided, extending between the compression and tension members, said guide columns being spaced apart between the upper ends thereof a distance corresponding to the width of the bolster to be used, and providing the bolster guide faces 14—14. The lower ends of the guide columns are offset inwardly toward each other as indicated at 15—15, the offsets being confined substantially to the longitudinal center of the side frame, said portions merging into the spring seat 16. The portions 17—17 are curved in each instance toward the journal boxes. By this construction, the window opening in the side frame is of greater width between the top portions of the guide columns than between the bottom portions of the guide columns, this resulting in a decrease in the length of the spring seat and a consequent diminution of the undesirable beam effect afforded by the ordinary spring seat, all resulting in greatly increased strength in the side frame.

Disposed upon the spring seat is a cluster of springs, preferably of standard size and preferably arranged in three horizontally extending rows 18, 19 and 20, the central row 19 being disposed between the offset portions 15—15 of the columns and comprising two springs. The remaining rows of springs in the embodiment illustrated each consists of three springs, as permitted by the greater length of the spring seat outwardly at each side of the offset portions 15—15 of the guide columns. By reason of the formation of the spring seat and the disposition of the springs, while the side frame is strengthened due to shortening the dis-

tance between the lower ends of the guide columns, nevertheless, increased spring capacity is provided.

In conjunction with a truck of this character wherein the side frames have bolster openings wider at the top thereof than at the lower end, there is utilized a full width bolster indicated generally by the reference character 21, the bolster having bearing faces 22—22 which bear upon the guide faces 14—14 of the columns. The bolster is of hollow formation, the end portion thereof having a top wall 23, a bottom wall 24 and side walls which provide the bearing faces 22—22. The bolster at each side thereof and spaced inwardly from the end thereof has the usual lugs 25—25 adapted to engage against the inner surfaces of the guide columns 13—13.

To permit an endwise insertion of the bolster 21 between the guide faces 14—14 of the columns, the end of the bolster beyond the lugs 25—25 is made smooth and without projections. In order to limit longitudinal movement of the bolster with reference to the side frames, a detachable member indicated generally by the reference character 26 is employed at each end of the bolster. The end portion 26 is preferably in the form of an integral casting and comprises a forward inclined wall 27 having cut-out portions 28 to lighten the structure, the inclined wall 27 at its ends merging into end walls indicated at 29. The member is provided with top flanges or extensions 30—30, each extension having a vertical reinforcing rib 300 adapted to be dropped against the inner surface of the adjacent side wall of the bolster, and a horizontal portion adapted to bear against the under surface of the top wall 23 thereof. A vertical rib 31 is provided at the junction between forward portions of the extensions 30—30 and the top portion of the inclined wall 27, said rib being adapted to abut against the forward edge of the top wall 23 of the bolster. Each horizontal portion of the extensions 30 has an upwardly projecting stud 32 adapted to detachably register with a suitable aperture 33 in the top wall 23 of the bolster. At the bottom portion of the inclined wall 27 is a vertically disposed wall 34, which merges into a bottom wall portion 35 adapted to fit beneath the bottom wall 24 of the bolster, the latter being offset at its end as indicated at 36 to accommodate the wall 35 and dispose the lower portion thereof flush with the lower portion of the wall 24. The bottom wall 35 is provided with upwardly projecting studs, indicated at 37, adapted to register with apertures in the offset portion 38 of the bottom wall 24 of the bolster, as best shown in Figure 4. Formed integrally with the end member and providing continuations of the rib 31 are laterally projecting

vertically disposed guide lugs or ribs 39—39, which are adapted to bear upon the outer surfaces of the guide columns 13—13 when the end member is in position.

By employing a structure of this character, it will be apparent that a full width bolster may be employed in conjunction with a side frame having a window opening of greater width at the top than at the bottom. In assembling the structure, the end of the bolster 21, with the end member detached therefrom, is inserted between the guide columns. When the end of the bolster is placed between the columns, the end member is placed into interlocking position with the studs 32—32 and 37 disposed in the apertures in the top and bottom walls of the bolster, the flanges 30 bearing beneath the top wall 23 of the bolster, and the bottom wall 35 of the end member bearing against the under surface of the offset portion 38 of the bottom wall of the bolster. When the end member has been applied, it and the bolster may be lowered into position to bear upon the spring cluster, and by reason of the weight imposed upon the end member, the studs of the same are maintained in engagement with the apertures of the bolster walls. The end member in this situation cannot be detached without lifting the bolster to permit removal of the studs from the apertures in the bolster. With the end member in position, it is apparent that the lugs 39—39 bear upon the outer surfaces of the guide columns and consequently maintain the bolster in the desired relation for its necessary up and down movement.

A somewhat different embodiment of the invention is illustrated in Figure 6, this construction being preferably utilized with a side frame of the character heretofore described. In this arrangement, a bolster 40 of the same character heretofore described is provided and an end member 41 utilized in connection therewith. The only difference between the construction illustrated in Figure 6 and the remaining figures of the drawings reside in providing a bottom wall for the end member indicated at 42 which is provided with a roller seat or seats, only one being shown and indicated at 43. A series of the roller seats corresponding to 43 are formed in the undersurface of the bolster as indicated at 44—44. These seats accommodate lateral motion rollers 45—45 which bear upon the roller seat member 46, the latter being provided with roller seats 47—47 adapted to accommodate the rollers 45. The roller seat member 46 bears upon the spring cluster indicated at 47 in the usual manner. In order to provide for limited longitudinal movement of the bolster 40, the guide lugs 48 upon the end member 41 and the guide lugs 49 formed upon the sides of the bolster are spaced apart a somewhat greater distance than the guide lugs 39—39 and the guide lugs 25—25.

Otherwise the construction is the same as that heretofore described in detail.

While I have herein shown and described what I now consider the preferred manner of carrying out my invention, the same is merely illustrative and I contemplate all changes and modifications that come within the scope of the claims appended hereto.

I claim:—

1. In a truck of the character described, the combination with a side frame having compression, tension, guide column and spring seat members, all defining a window opening, said guide columns being formed to provide a space therebetween narrower at the bottom than at the top of said window opening; a bolster corresponding substantially to the space between the upper portion of the guide columns and having normal cooperation with said guide columns in the space between the upper portion thereof, said bolster being endwise insertable at said upper portion of said columns; springs interposed between said bolster and spring seat; and a separate member forming an end portion of the bolster and adapted to bear upon said springs, said member having bolster guide lugs and being detachable with reference to said bolster.

2. In a truck of the character described, the combination with a side frame having compression, tension, guide column and spring seat members, all defining a window opening narrower at the bottom than at the top; a bolster of a width corresponding substantially to the width between the upper portions of the guide columns and having its end portion free of obstructions and insertable between said columns; a cluster of springs interposed between the said bolster and spring seat; and an end portion independent of said bolster and being detachably connected to said bolster, said end portion being provided with guide lugs adapted to engage the outer surfaces of said guide columns.

3. In a truck of the character described, the combination with a side frame having compression, tension, guide column and spring seat members all defining a window opening of greater width at the top than at the bottom; a spring cluster disposed on said spring seat; a bolster of a width adapted to fit operably between said guide columns in the widened portion of said window opening and being endwise insertable with reference thereto; and an end member for said bolster extending beyond the end thereof and having means detachably interlocking with said bolster, said interlocking means being held against detachment when the bolster and end member are in operative position with reference to said side frame.

4. In a truck having a side frame including spaced guide columns and a spring seat; bolster supporting means disposed upon said seat; a bolster having an end portion in-

serted between said guide columns and bearing upon a portion of said bolster supporting means; and an end member beneath said bolster and extending beyond the end thereof and detachably connected to said bolster and bearing upon the remaining portion of said bolster supporting means, said end member being provided with guide lugs adapted to engage the outer sides of the guide columns of said side frame.

5. In a truck having a side frame including spaced guide columns, and a spring seat; a cluster of springs supported by said spring seat; a bolster having an end portion disposed between said guide columns and bearing upon said spring cluster, said bolster being of hollow construction and having upper and lower spaced walls; and an end member projecting beyond the end of said bolster and bearing on the spring cluster, said end member having means extending beneath the upper and lower walls of said bolster, said means being detachably interconnected with said walls and maintained in position under the influence of the bearing stresses imposed thereon, said end member being provided with guide lugs adapted to bear upon said guide columns.

6. In a truck, the combination with a side frame having guide columns and a spring cluster supported by said seat; a bolster disposed between said columns and provided with spaced walls, said bolster bearing upon said springs, the lower wall of said bolster being offset; an end member bearing upon a portion of the spring cluster and having means engageable within the offset of the lower wall of said bolster and beneath the upper wall of said bolster, said means including inter-engaging elements maintained in position through the bearing engagement of said end member with said spring cluster, said end member being provided with guide lugs co-operating with said guide columns.

7. As an article of manufacture a bolster having a hollow end portion comprising side, top and bottom walls, the bottom wall being offset at its under-surface and said top and bottom walls being provided with means adapted for detachable accommodation of a co-operating member.

8. In a lateral motion truck, the combination with a side frame having guide columns and a spring seat; a roller seat carried by said springs and having rollers associated therewith; a bolster extending between said guide columns and having roller seats accommodating certain of said rollers; and an end member detachably connected with said bolster and having roller seat means adapted to cooperate with the other of said rollers.

9. In a lateral motion truck, the combination with a side frame having guide columns and a spring seat; a roller seat carried by said springs and having a roller associated

therewith; a bolster extending between said guide columns; and an end member detachably connected with said bolster and having roller seat means cooperating with said
5 roller.

10. In a truck, the combination of a side frame having a bolster opening; a bolster hollow at its end; supporting means interposed between said bolster and side frame; and an end member for said bolster underlying the end portion of the bolster and extending into the hollow end thereof and having means interlocking with co-operating means on the upper and lower portions of
15 said bolster adjacent the hollow end thereof, said interlocking means being maintained against detachment when said bolster and end member are in operative position with reference to said side frame.

20 11. In a truck, the combination with a side frame having a bolster opening; a bolster endwise insertable with reference to said bolster opening and provided with guide lugs adapted to engage said frame inwardly of the
25 end of the bolster; supporting means interposed between the bolster and side frame; an end member extended beyond the end of the bolster and having outer guide lugs adapted to engage said side frame; and detachable
30 interlocking means between said end member and bolster, said means being held against detachment when the bolster and end member are in operative position with reference to said side frame and bolster supporting
35 means.

In witness that I claim the foregoing I have hereunto subscribed my name this 16th day of May 1929.

KARL M. HAMILTON.

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