

May 23, 1933.

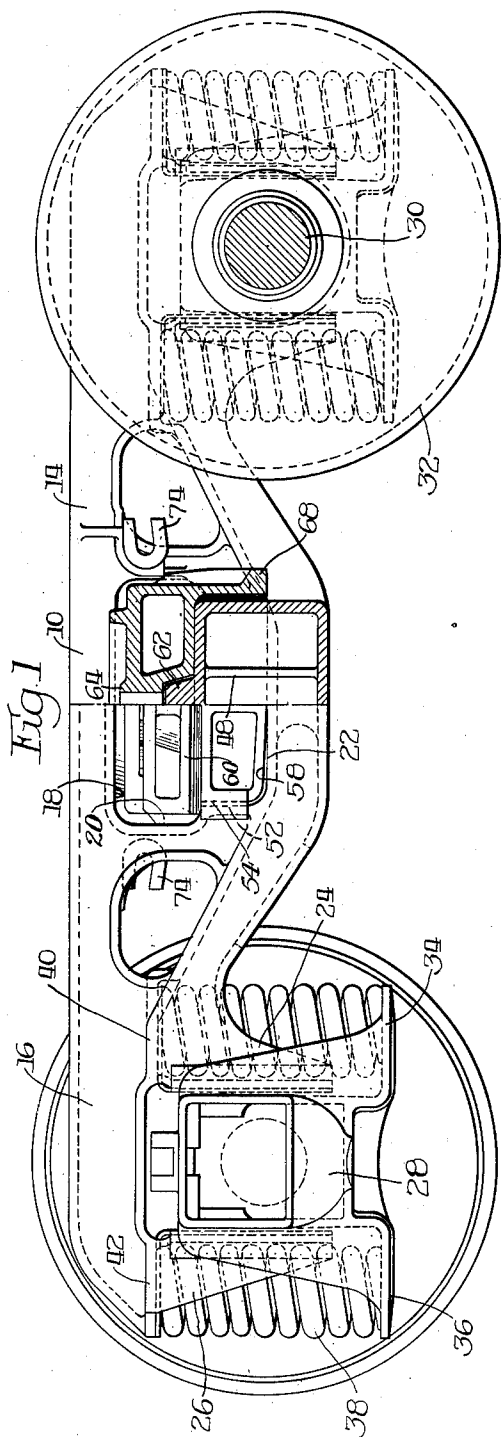
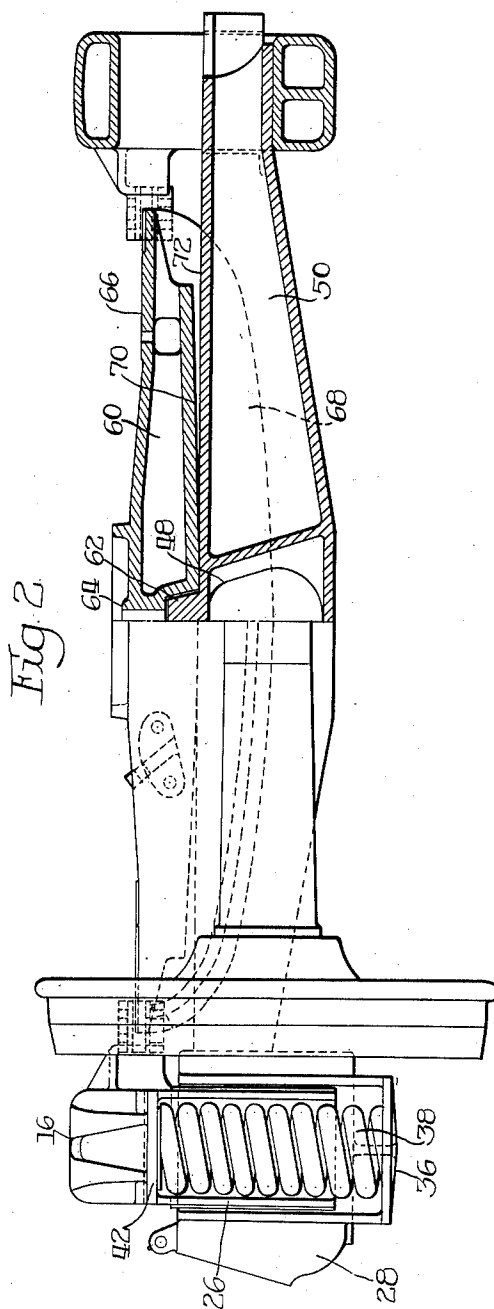
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1,910,992

TRUCK

Filed July 21, 1931

2 Sheets-Sheet 1



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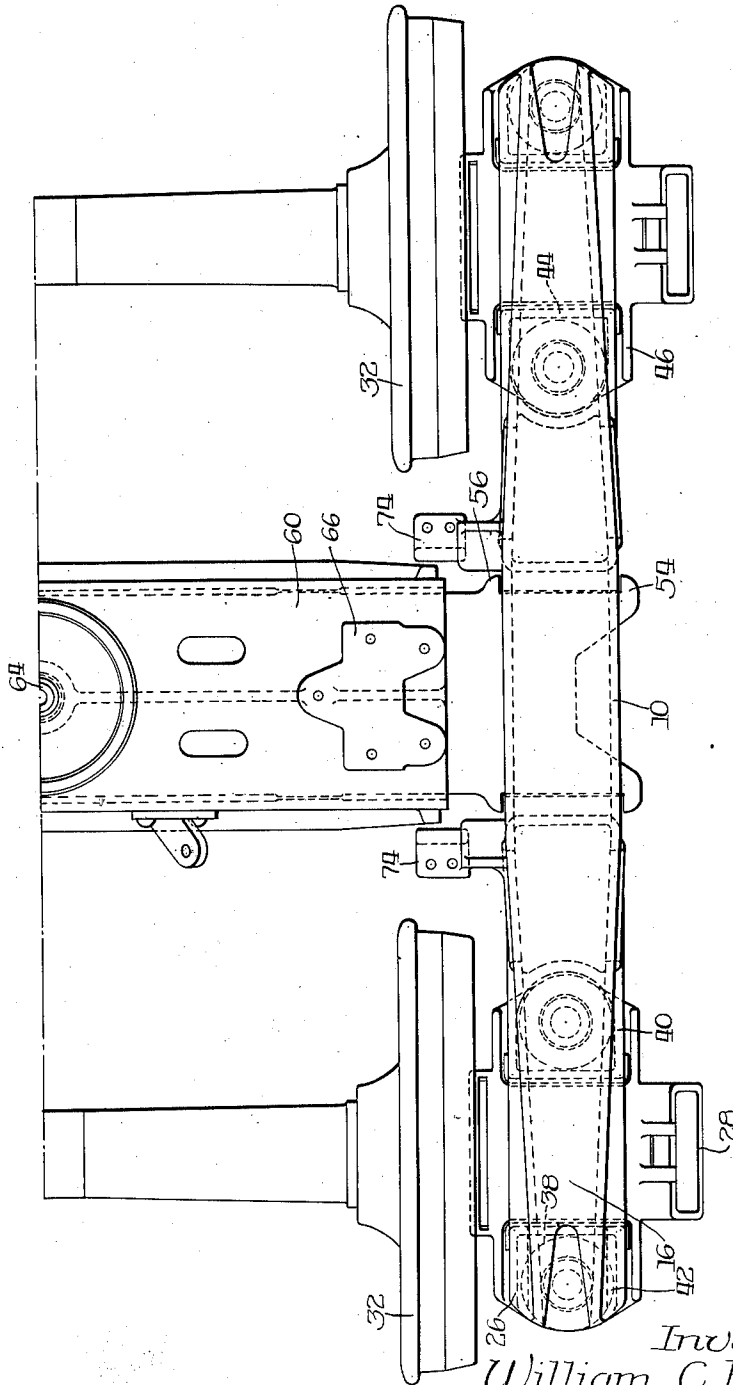
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Fig. 3.



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UNITED STATES PATENT OFFICE

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TRUCK

Application filed July 21, 1931. Serial No. 552,156.

This invention pertains to a railway car truck.

A certain type of truck is provided with side frames of the pedestal type in which the journal boxes are guided between pedestal jaws, there being springs carried on the top of each journal box for supporting the truck side frame, said springs being positioned between associated pedestal jaws and within a recess in the side frame. Such a method of positioning and enclosing a spring is undesirably restrictive upon the size, proportions, and capacities of the springs so placed, so that in many cases it is impractical to obtain the desirable spring capacity and deflection in high capacity car trucks within the usual clearance conditions.

An object of this invention, therefore, is to provide a car truck construction wherein increased spring capacity is provided, in combination with the pedestal type of side frame.

Another object of the invention is to provide a construction wherein there is direct connection between the side frames and bolster, but wherein the engaging surfaces are arranged for true rocking action to permit a more constant load application.

Yet another object of the invention is to provide a construction having a bolster arranged for rocking action transversely of the truck in such a manner as to prevent excessive side roll of the car.

A further object of the invention is to provide a car truck construction wherein an increased spring capacity is provided in combination with the bolster adapted to rock in a plurality of directions.

A yet further object of the invention is to provide car truck construction wherein an increased spring capacity is provided, in combination with the pedestal type of side frame, and wherein a two-part bolster is provided rocking in a plurality of directions.

With these and various other objects in view, the invention may consist of certain novel features of construction and operation as will be more fully described and particularly pointed out in the specification, drawings, and claims appended hereto.

In the drawings, which illustrate an em-

bodiment of the device and wherein like reference characters are used to designate like parts—

Figure 1 is a side elevation partly in section of a truck embodying the invention;

Figure 2 is an end elevation partly in section of the truck shown in Figure 1;

Figure 3 is a one-half top plan view of the truck construction shown in Figure 1.

In the type of truck construction illustrated, the side frames 10 are preferably of truss construction, having spaced tension and compression members 12 and 14 converging and being integrally formed adjacent each end 16 and being provided with a central bolster opening 18 defined by the spaced columns 20 connecting the tension and compression members, the opening formed being provided with a bolster seat 22, said seat being integrally formed on the upper face of the tension member between the columns. The end portions 16 are provided with spaced pedestals 24 and 26 for guiding an associated journal box 28 therebetween. Each journal box 28 is adapted to cooperate with the journal end 30 of the wheel and axle assembly 32, which may be of any construction, such as the standard A.R.A. type, the journal box conforming to any desired construction. Each journal box is provided with spring seats 34 and 36 extending laterally from each side thereof upon which are mounted spring nests 38, said springs carrying the side frame 10 upon seats 40 and 42 disposed on said side frame, the springs being partly embraced by the pedestal jaw structure including the face 44 and the flanges 46.

The springs may be of any desired construction, such as described in application Serial No. 552,153, filed July 21, 1931. It will thus be seen that by placing the springs on seats on each side of the journal box, space is provided for two springs of substantially the same diameter and capacity as can be obtained from a single set on top of the box. Furthermore, adequate space is provided for springs of relatively greater height and deflection.

The bolster assembly 48 is of the two-part rocker type construction and includes the

lower bolster member 50 extending between the side frames and into the opening defined by the guides 52 of the columns 20. The lower bolster is provided with flanges or lugs 54 and 56 adapted to embrace the guide members 52 whereby the bolster spaces and ties together the side frames, at the same time being permitted rocking movement longitudinally of the truck by virtue of the arcuate surface 58 provided on that part of the bolster disposed to contact the member 22. Although the arcuate surface is shown on the bolster at 58 and the flat cooperating surface is shown at 22 on the side frame, it will be understood that the surfaces may be reversed, the surface 22 being convexed. The rocking connection between the side frames and bolster permits angular vertical movement of the side frames to accommodate themselves to track irregularities without eccentrically loading the bolster corners. The upper bolster member 60 of similar construction to that shown in application Serial No. 470,358, filed July 24, 1930, is positioned on the lower bolster member 50 by means of the interengaging members 62, the upper bolster member being provided with the center plate 64 of usual construction. The upper bolster member is provided with the side bearing 66 and the flanges 68 embracing the lower bolster member and serving to position the upper bolster member thereon, the upper bolster member being provided with the arcuate rocking surface 70 having rocking cooperation with the upper flat surface 72 of the lower bolster member, but it will be understood that the surface 72 may be concaved but of a greater radius than the convex surface 70. The center of the radius of the curved surface of the upper bolster member 60 lies above the center of gravity of the car body. Thus any tendency toward side roll of the car body causes the upper bolster member to roll on the lower and must result in lifting the center of gravity. This is resisted by the inertia of the car body weight and serves to stabilize the car body against excessive side roll. Brake hanger brackets 74 are provided on each side of the bolster for accommodation of the proper brake rigging.

With a truck of the construction shown rocking of the bolster is permitted longitudinally and transversely of the truck due to the plurality of parts thereof. At the same time, a truck of increased spring capacity is provided. The truck construction prevents eccentric loading of the parts, and easy riding qualities of the car are insured.

It is to be understood that I do not wish to be limited by the exact embodiment of the device shown which is merely by way of illustration and not limitation, as various and other forms of the device will of course be apparent to those skilled in the art with-

out departing from the spirit of the invention or the scope of the claims.

I claim:

1. In a four-wheel car truck, the combination with a side frame having pedestals and a bolster seat, of a journal box mounted between said pedestals for vertical motion therein, springs carried upon opposite sides of said journal box for supporting said side frame, and a bolster assembly seated upon said bolster seat for flexible connection with said side frame, a portion of said bolster assembly being movable in a plurality of directions.

2. In a four-wheel car truck, the combination with a side frame having pedestals and a bolster seat, of a journal box mounted between said pedestals for vertical motion therein, springs carried upon opposite sides of said journal box and embraced by said pedestals for supporting said side frame, and a bolster assembly seated upon said bolster seat for flexible connection with said side frame, a portion of said bolster assembly being movable in a plurality of directions.

3. In a four-wheel car truck, the combination with side frames each provided with pedestals and a bolster opening having a bolster seat, of journal boxes mounted between said pedestals and supporting said side frames through springs mounted on opposite sides of each journal box, and a bolster assembly spacing said side frames and having its end portions in said bolster openings and resting upon the bolster seats, a portion of said bolster assembly being movable in a plurality of directions.

4. In a four-wheel car truck, the combination with side frames each provided with pedestals and a bolster opening having a bolster seat, of journal boxes mounted between said pedestals and supporting said side frames through springs mounted on opposite sides of each journal box, and a bolster assembly spacing said side frames and having its end portions in each bolster opening of less depth than the bolster opening and resting upon said bolster seat, said bolster assembly being provided with flanges adapted to engage an edge of each bolster opening to prevent lateral disengagement of the bolster assembly and side frames, a portion of said bolster assembly being movable in a plurality of directions.

5. In a four-wheel car truck, the combination with a side frame having pedestals and a bolster seat, of a journal box mounted between said pedestals and supporting said side frame through springs mounted on opposite sides of said journal box, and a bolster assembly resting upon said bolster seat, one of the engaging surfaces of said bolster assembly and bolster seat being arcuately formed to permit rocking of the bolster as-

sembly with respect to the side frame, said bolster assembly being formed to permit rocking in another direction.

6. In a pedestal four-wheel car truck, the combination of side frames each provided with a seat, and a bolster assembly joining said frames and resting on said seats, one of the engaging surfaces of said bolster assembly and seats being arcuately formed to permit vertical rocking of the bolster assembly on said seats, said bolster assembly being formed to permit rocking in another direction.

7. In a pedestal four-wheel car truck, the combination of side frames each provided with a seat, and a spacing member joining said frames and resting on said seats, one of each of the engaging surfaces of said spacing member and seats being arcuately formed to permit vertical rocking of the spacing member on said seats, said spacing member being provided with flanges adapted to engage said side frames to position said spacing member laterally with respect to said side frames, and a bolster cooperating with said spacing member and formed to permit rocking in another direction thereon.

8. In a four-wheel car truck, the combination with a side frame having pedestals and a bolster seat, of a journal box mounted between said pedestals for vertical motion therein, springs carried upon opposite sides of said journal box for supporting said side frame, and a bolster assembly seated upon said bolster seat for flexible connection with said side frame, said bolster assembly being formed of a plurality of relatively movable members whereby a portion of the bolster assembly is movable in a plurality of directions with respect to said side frame.

9. In a four-wheel car truck, the combination with a side frame having pedestals and a bolster seat, of a journal box mounted between said pedestals for vertical motion therein, springs carried upon said journal box for supporting said side frame, and a bolster assembly seated upon said bolster seat for flexible connection with said side frame, said bolster assembly being formed of a plurality of relatively movable members one of which is movable in a plurality of directions with respect to said side frame.

10. In a four-wheel car truck, the combination with side frames each provided with pedestals and a bolster opening having a bolster seat, of journal boxes mounted between said pedestals and supporting said side frames through springs mounted on opposite sides of each journal box, and a bolster assembly spacing said side frames and having its end portions in said bolster openings and resting upon the bolster seats, said bolster assembly being formed of a plurality of relatively movable members whereby a portion of the bolster assembly is movable in a plu-

rality of directions with respect to said side frame.

11. In a four-wheel car truck, the combination with side frames each provided with pedestals and a bolster opening having a bolster seat, of journal boxes mounted between said pedestals and supporting said side frames through springs mounted on opposite sides of each journal box, and a bolster assembly spacing said side frames and having its end portions in each bolster opening of less depth than the bolster opening and resting upon said bolster seat, said bolster assembly being provided with flanges adapted to engage an edge of each bolster opening to prevent lateral disengagement of the bolster assembly and side frames, said bolster assembly being formed of a plurality of relatively movable members whereby a portion of the bolster assembly is movable in a plurality of directions with respect to said side frame.

12. In a four-wheel car truck, the combination with a side frame having pedestals and a bolster seat, of a journal box mounted between said pedestals for vertical motion therein, springs carried upon said journal box for supporting said side frame, and a bolster assembly seated upon said bolster seat for flexible connection with said side frame, said bolster assembly being formed of an upper and lower member, said upper member having an arcuate surface engaging said lower member for rocking movement with respect thereto.

13. In a four-wheel car truck, the combination with a side frame having pedestals and a bolster seat, of a journal box mounted between said pedestals for vertical motion therein, springs carried upon said journal box for supporting said side frame, and a bolster assembly seated upon said bolster seat for flexible connection with said side frame, said bolster assembly being formed of an upper and lower member, said upper member having an arcuate surface engaging said lower member for rocking movement with respect thereto, said upper member having portions positioningly embracing said lower member.

14. In a four-wheel car truck, the combination with a side frame having pedestals and a bolster seat, of a journal box mounted between said pedestals for vertical motion therein, springs carried upon said journal box for supporting said side frame, and a bolster assembly seated upon said bolster seat for flexible connection with said side frame, said bolster assembly being formed of an upper and lower member, said upper member having an arcuate surface engaging said lower member for rocking movement with respect thereto, said upper member having portions positioningly embracing said lower member.

lower member for rocking movement with respect thereto, the lower member having an arcuate surface rockingly mounted on said side frame, whereby the rocking between said bolster members and frame forms said flexible connection, said upper member having portions positioningly embracing said lower member.

19. In a four-wheel car truck, the combination with side frames each provided with pedestals and a bolster opening having a bolster seat, of journal boxes mounted between said pedestals and supporting said side frames through springs mounted on each journal box, and a bolster assembly spacing said side frames and having its end portions in each bolster opening of less depth than the bolster opening and resting upon said bolster seat, said bolster assembly being provided with flanges adapted to engage an edge of each bolster opening to prevent lateral disengagement of the bolster assembly and side frames, said bolster assembly being formed of an upper and lower member, said upper member having an arcuate surface engaging said lower member for rocking movement with respect thereto, the lower member having an arcuate surface rockingly mounted on said side frame, whereby the rocking between said bolster members and frame forms said flexible connection, said upper member having portions positioningly embracing said lower member.

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