Nov. 5, 1946. C. L. HEATER 2,410,580

RAILWAY CAR

Filed May 17, 1944 2 Sheets-Sheet 1

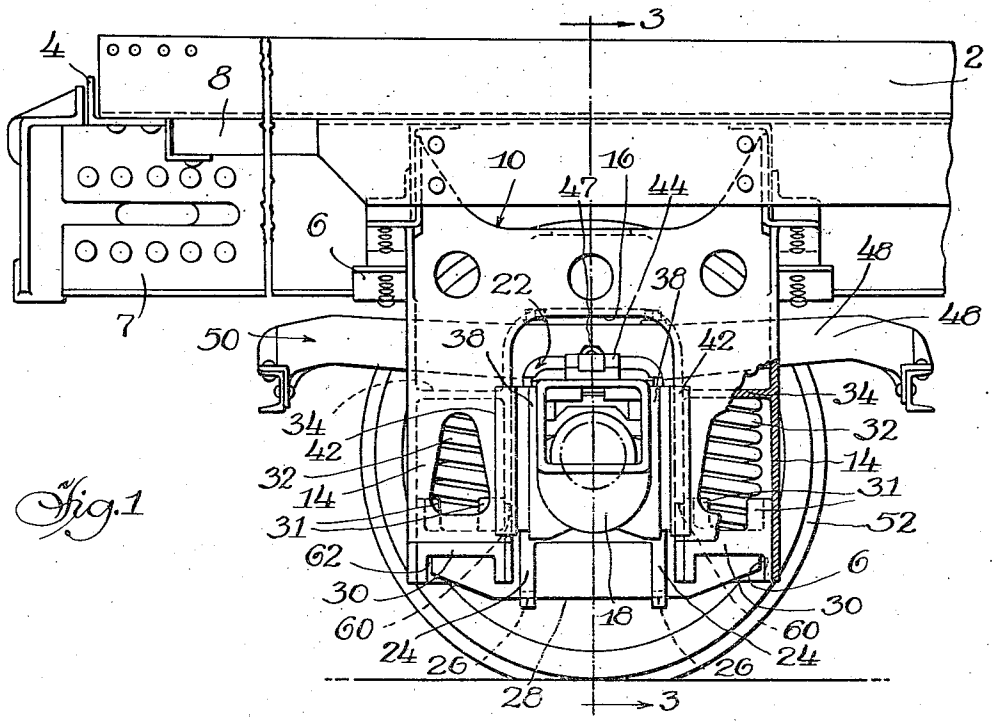


Fig. 1

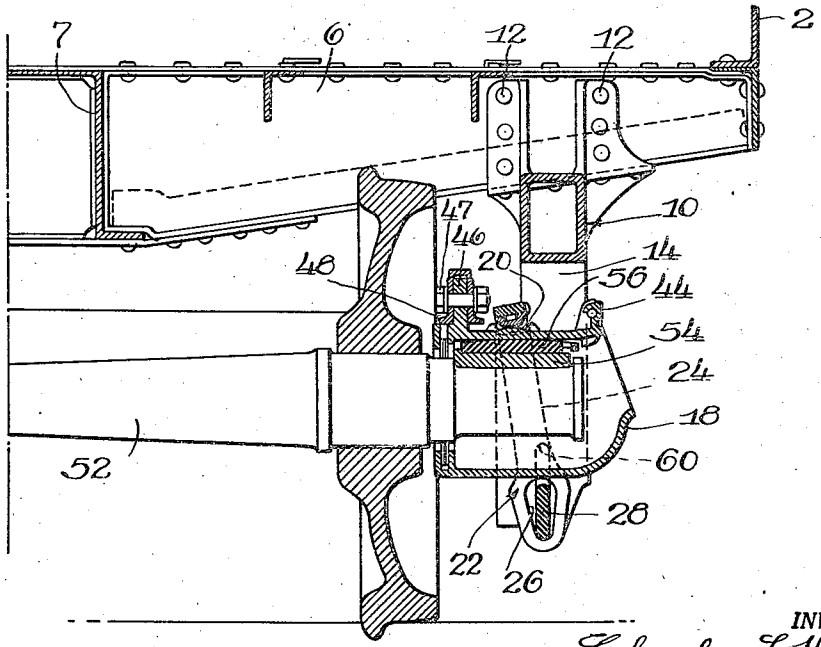


Fig. 3

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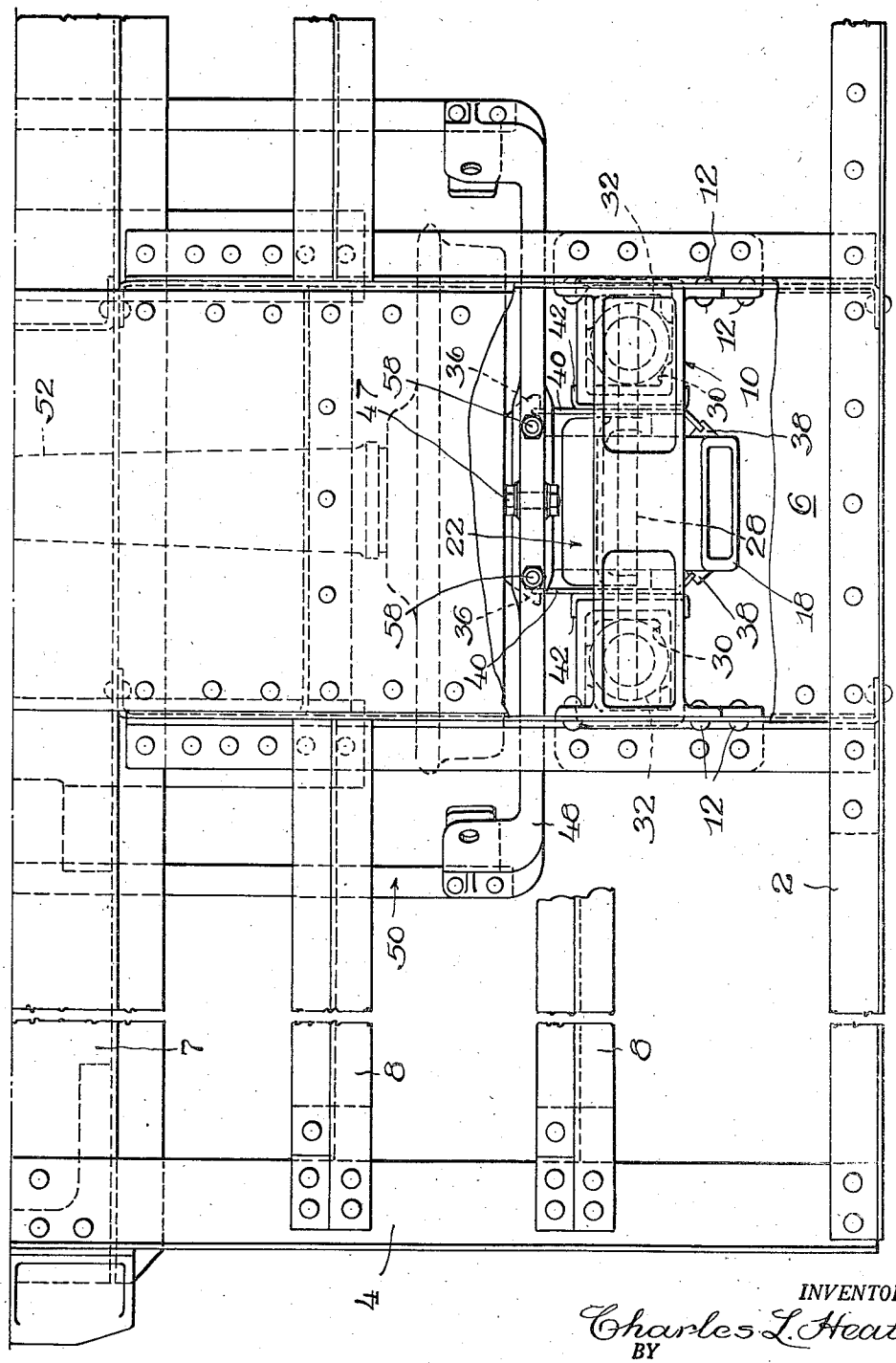


Fig. 2

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2,410,580

RAILWAY CAR

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Application May 17, 1944, Serial No. 535,911

10 Claims. (Cl. 105—222)

1

My invention relates to railway cars and more particularly to a novel suspension therefor.

The general object of my invention is to devise an arrangement in which the car body is resiliently supported directly from each wheel and axle assembly without the use of a conventional truck. In this manner I am enabled to use any desired number of wheel and axle assemblies by eliminating the trucks, each of which customarily comprises two assemblies.

The specific object of my invention is to design a railway car in which the car body comprises one or more transverse bolsters, each end of the bolster being rigidly secured to a pedestal casting comprising spaced hollow depending pedestal legs receiving therebetween a journal box carrying resilient means housed within said legs and affording support for the car body.

Another object of my invention is to provide in an arrangement such as above described a spring hanger rockably mounted on each journal box and affording a support for the car supporting reesilient means.

In the drawings,

Figure 1 is a fragmentary side elevation of one end of a railway car embodying my invention, only one wheel and axle assembly being shown, inasmuch as the connection of each assembly to the car body is susbtantially identical.

Figure 2 is a fragmentary top plan view of the structure shown in Figure 1, only one side of the car being illustrated, inasmuch as it is symmetrical about its longitudinal center line.

Figure 3 is a fragmentary sectional view taken in the transverse vertical plane indicated by the line 3—3 of Figure 1.

Describing my invention in detail, the car body comprises at each side thereof a side sill 2 connected at each end thereof to an end sill 4. The bolster 6 extends transversely of the car and is connected at each end thereof to the adjacent side sill, said bolster being connected intermediate its ends to the center sill 7. Intermediate sills or floor supports 8, 8 extend between the bolster 6 and the end sill 4.

A pedestal casting generally designated 10 is rigidly connected as by rivets at 12, 12 to the body bolster 6, said casting comprising the spaced depending hollow pedestal legs 14, 14 defining therebetween a pedestal opening 16 (Figure 1), within which is received a journal box 18.

The journal box comprises an arcuate surface 20 (Figure 3) on the top thereof affording a rockable seat for a generally U-shaped swing hanger 22, the spaced depending arms 24, 24 of which

2

are provided with slots 26, 26 adjacent their lower extremities for the reception of a bar 28 which supports spring seats or support members 30, 30 slidably seated within respective legs 14, 14 for vertical reciprocation therewithin, each of said spring seats 30, 30 being formed with upstanding flanges 31, 31 (Figure 1) affording positioning means for a spring 32 mounted on the seat 30, said spring bearing at its upper extremity against the horizontal web 34 integrally formed within the pedestal leg 14.

The journal box is provided at each side thereof with inboard and outboard grooved flanges 36 and 38 for the reception of a wear plate 40, said plate defining with the adjacent side of the box a space within which the hanger 22 may swing, as hereinafter described, and each leg is provided with a wear plate or liner 42 for slidable cooperation with the adjacent plate 40. The journal box is provided on its outboard end with a hinge lug 44 for pivotal support of an associated cover or lid, as will be clearly understood by those skilled in the art, and adjacent its inboard end the box is provided with an upstanding lug 46 (Figure 3) to which is connected by a bolt and nut assembly 47 the transverse member 48 of a substantially rectangular brake frame 50, formed and arranged, as will be clearly understood by those skilled in the art, for the support of brake gear for the wheel and axle assembly 52, each end of which is mounted within the associated box 18 by means of a conventional bearing 54 and a bearing wedge 56 (Figure 3).

It will be understood that while the journal box 18 herein illustrated is of the conventional friction type utilizing a brass friction bearing 54 for cooperation with the wheel and axle assembly 52, if desired any suitable roller bearing journal box assembly may be utilized.

It may be noted that because of the diagonal plane in which the swing hanger 22 is disposed in its normal position, as seen in Figure 3, a force is applied to the journal box tending to push it in an outboard direction off the axle of the assembly 52 and this force is resisted by the brake frame 50, which is a substantially rigid rectangular structure connected at each end thereof to the associated journal box by the before-mentioned bolt and nut assembly 47 and by the spaced bolt and nut assemblies 58, 58 (Figure 2).

The bar 28 is vertically reciprocable adjacent each extremity thereof within a slot 60 formed in the adjacent wall of the hollow pedestal leg 14, and each extremity of the bar is adapted for abutment with the adjacent surface 62 (Figure 1) of

the spring seat 30, thereby maintaining said bar in assembled relationship. It will be understood that the slots 60, 60 permit relative vertical movement between the pedestal casting 10 and the bar 28 as the car body oscillates on the springs 32, 32; however, the slots 60, 60 prevent relative movement between the pedestal casting and the bar 28, thus causing a rocking action of the swing hanger 22 on the arcuate surface 26 of the journal box during such lateral movement. In this connection it may be noted that each slot 26, as seen in Figure 3, is widened at its upper extremity to afford limited pivotal movement of the bar 28 therein during swinging movement of the hanger 22. It may also be noted that, inasmuch as each hanger 22 is normally disposed in a diagonal plane inclined downwardly and outwardly of the car, lateral movement of the car in either direction causes a slight tipping or tilting action thereof in response to the tilting of the opposed swing hangers 22, 22 at opposite ends of the wheel and axle assembly 52.

It will be understood that in my novel arrangement any desired number of wheel and axle assemblies 52, 52, within reason may be utilized in a single car, inasmuch as each wheel and axle assembly is afforded an independent connection to the car body.

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 without departing from the spirit of the invention or the scope of the claims.

I claim:

1. In a railway car, a car body, a pedestal casting secured to said body at each side of the car, said casting comprising spaced hollow pedestal legs with internal spring seats, a wheel and axle assembly comprising a journal box received between said legs, a swing hanger rockably mounted on said box and comprising spaced portions depending at opposite sides thereof, said portions having aligned openings adjacent their lower extremities, a bar extending through said openings beneath said box and carrying spring support members slidably fitted in respective legs and vertically reciprocable therewithin, and resilient means housed within said legs and bearing against said seats and seats on said support members, said bar being vertically reciprocable within complementary vertical slots in said legs, each of said spring support members comprising a portion depending from one end of the seat thereon and engageable with the adjacent extremity of said bar to limit relative longitudinal movement thereof.

2. In a railway car, a car body, a pedestal casting secured to said body at each side of the car, said casting comprising spaced pedestal legs, a wheel and axle assembly comprising a journal box received between said legs, a swing hanger rockably mounted on said box about an axis extending transversely thereof, said hanger comprising spaced arms depending at opposite sides of said box and comprising aligned openings adjacent their lower extremities, a bar extending through said openings beneath said box and carrying members slidably fitted in respective legs and vertically reciprocable therewithin, each of said members supporting resilient means bearing against spring seats thereon and on respective pedestal legs, said bar being vertically reciprocable within complementary vertical slots in said legs, and said bar being afforded limited pivotal movement within said openings on an axis parallel to said first-mentioned axis, each of said members comprising means depending therefrom at one end of the seat thereon and having a substantially vertical surface engageable with the adjacent extremity of said bar to limit relative longitudinal movement thereof.

3. In a railway car, a car body, a pedestal casting rigidly secured to said body at each side of the car, said casting comprising spaced hollow pedestal legs with internal spring seats, a wheel and axle assembly comprising a journal box received between said legs, a swing hanger rockably mounted on said box and comprising spaced arms depending at opposite sides thereof, said arms having aligned openings adjacent their lower extremities, a bar pivotally fulcrumed within said openings and extending beneath said box, spring support members slidably mounted on said bar and fitted within respective legs for vertical reciprocation therewithin, and resilient means housed within each leg and compressed between the spring seat thereof and a spring seat on the support member therein, said bar being vertically reciprocable within complementary slots formed in said legs, each of said members comprising means depending therefrom at one end of the seat thereon and having a substantially vertical surface engageable with the adjacent extremity of said bar to limit relative longitudinal movement thereof.

4. In a railway car, a car body with spaced depending pedestal legs fixed thereto, a wheel and axle assembly comprising a journal box between said legs, a swing hanger rockably mounted on said box and comprising spaced arms depending at opposite sides thereof, a bar extending beneath said box and pivotally connected to respective arms, and members at opposite ends of said bar vertically reciprocable in said legs and supporting resilient means in abutment with spring seat means thereon and on said legs, each of said members comprising means extending downwardly at one end of the spring seat means thereon and in spaced relationship to the adjacent extremity of said bar for engagement therewith to limit relative longitudinal movement thereof.

5. In a railway car, a car body with spaced depending pedestal legs fixed thereto, a wheel and axle assembly comprising a journal box between said legs, a swing hanger rockably mounted on said box and comprising spaced arms depending at opposite sides thereof, a bar extending beneath said box and pivotally connected to respective arms, and members at opposite ends of said bar vertically reciprocable in said legs and supporting springs in abutment with spring seats thereon and on said legs, said bar being vertically reciprocable within complementary vertical slots formed in respective legs, each of said members comprising means depending therefrom at one end of the seat thereon and having a substantially vertical surface engageable with the adjacent extremity of said bar to limit relative longitudinal movement thereof.

6. In a railway car, a car body comprising spaced integral depending hollow pedestal jaws fixed thereto, a wheel and axle assembly including journal boxes received within respective jaws, a swing hanger mounted on each box and comprising spaced arms depending at opposite sides thereof, a bar pivotally connected to respective arms and extending beneath the associated journal box, members on said bar slidably fitted

within the associated pedestal jaws and vertically reciprocable therewithin, said members carrying resilient means bearing against spring seat means thereon and on the associated jaws and each comprising means extending downwardly from the spring seat means thereon and in spaced relationship to the adjacent extremity of said bar for engagement therewith to limit relative longitudinal movement thereof, and a connector independent of the body and the axle secured to said boxes for holding them in proper fixed spaced relationship.

7. In a railway car, a car body with spaced depending pedestal legs fixed thereto, a wheel and axle assembly comprising a journal box between said legs, a swing hanger rockably mounted on said box and comprising spaced arms depending at opposite sides thereof, a bar extending beneath said box and pivotally connected to respective arms, and members on said bar supporting springs in abutment with spring seats thereon and on said legs, each of said members comprising abutment means extending downwardly at one end of the seat thereon and adjacent an extremity of said bar for engagement therewith to limit relative longitudinal movement thereof.

8. In a railway car, a car body comprising spaced integral depending hollow pedestal jaws fixed thereto, a wheel and axle assembly including journal boxes received within respective jaws, a swing hanger mounted on each box and comprising spaced arms depending at opposite sides thereof, a bar pivotally connected to respective arms and extending beneath the associated journal box, members on said bar slidably fitted within the associated pedestal jaws and vertically reciprocable therewithin, said members carrying resilient means bearing against spring seat means thereon and on the associated jaws and each

comprising means extending downwardly from the spring seat means thereon and in spaced relationship to the adjacent extremity of said bar for engagement therewith to limit relative longitudinal movement thereof, and a rigid rectangular brake frame secured at opposite ends thereof to said boxes and holding them in proper fixed spaced relationship.

9. In a railway car, a car body with spaced depending pedestal legs fixed thereto, a wheel and axle assembly comprising a journal box between said legs, a swing hanger rockably mounted on said box and comprising spaced arms depending at opposite sides thereof, a bar extending beneath said box and pivotally connected to respective arms, and means supported on said bar vertically reciprocable therewith and carrying springs in abutment with spring seats thereon and on said legs, each of said means having a portion thereof extending downwardly from the spring seat thereon in spaced relationship to the adjacent extremity of said bar for engagement therewith to limit relative longitudinal movement thereof.

10. In a railway car, a car body with spaced depending pedestal legs fixed thereto, a wheel and axle assembly comprising a journal box between said legs, a swing hanger rockably mounted on said box and comprising spaced arms at opposite sides thereof, a bar extending beneath said box and connected to said arms, and means at opposite ends of said bar vertically reciprocable therewith and comprising a resilient support for said body, each of said means being formed and arranged to provide a substantially vertical surface positioned in spaced relationship to the adjacent extremity of said bar for abutment therewith to limit relative longitudinal movement thereof.

CHARLES L. HEATER.