April 30, 1946. C. E. TACK 2,399,519

TRUCK

Original Filed May 26, 1941 2 Sheets-Sheet 1

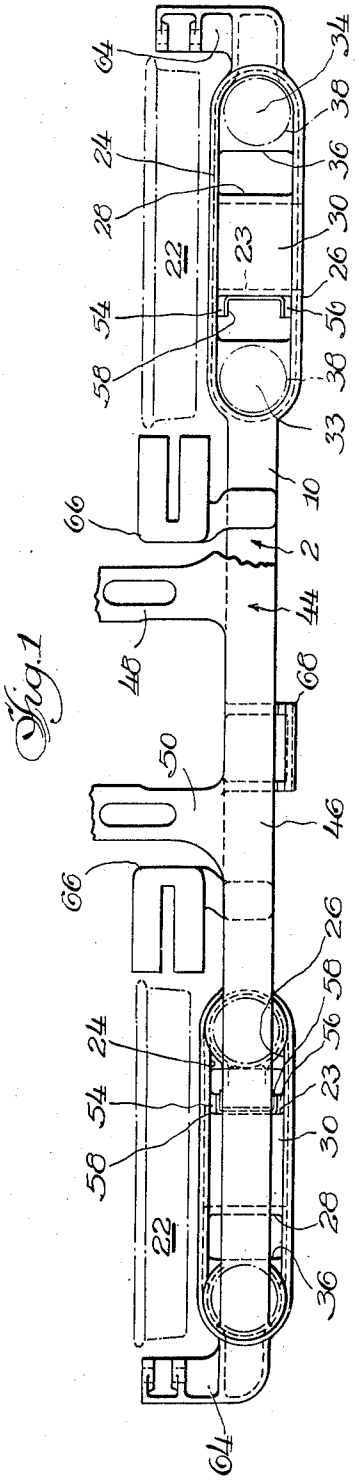


Fig. 1

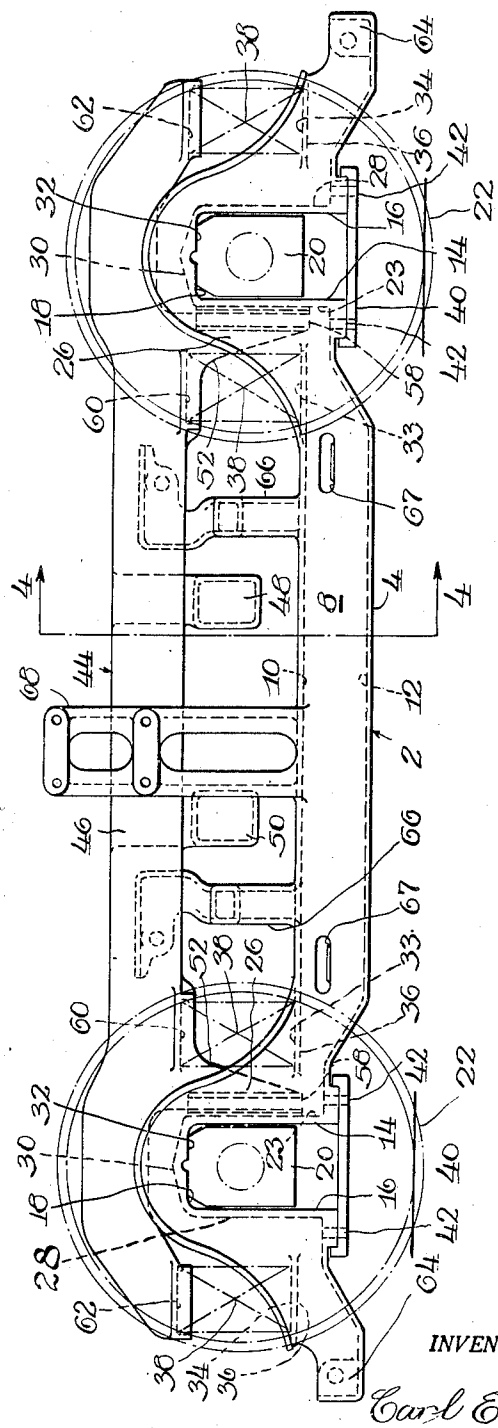


Fig. 2

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Fig. 4

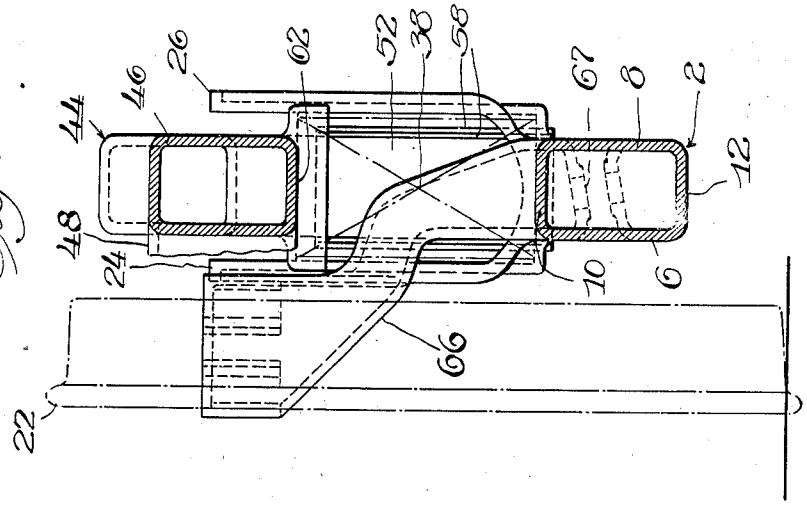
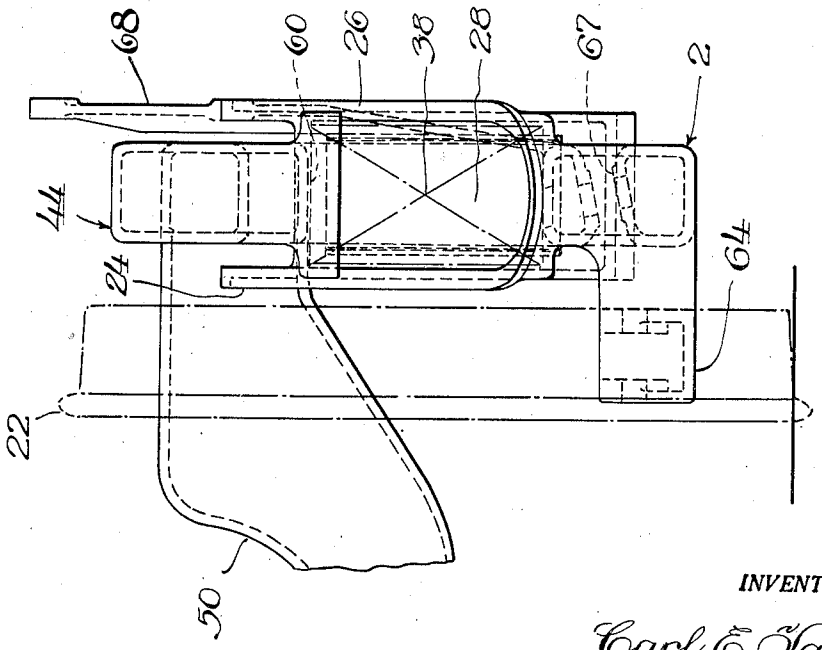


Fig. 3



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UNITED STATES PATENT OFFICE

2,399,519

TRUCK

Carl E. Tack, Chicago, Ill., assignor to American Steel Foundries, Chicago, Ill., a corporation of New Jersey

Original application May 26, 1941, Serial No. 395,131. Divided and this application November 26, 1943, Serial No. 511,884

8 Claims. (Cl. 105—182)

My invention relates to railway car trucks and more particularly to a novel passenger car truck in which the upper frame member is spring-supported from equalizers or lower frame members mounted on the truck journal boxes. The present application is divided out of my co-pending application, Serial No. 395,131, filed May 26, 1941, in the United States Patent Office, for "Brake arrangement."

The principal object of the present invention is to design a novel spring suspension wherein the upper frame member is supported from springs mounted on the equalizers inwardly, as well as outwardly of the journal box engaging portions thereof.

In my novel truck, each end portion of the equalizer is provided with spaced pedestals defining an opening for the reception of the associated journal box, springs being housed in respective pedestals for the support of the upper frame member which comprises adjacent each end thereof a depending leg housed in the adjacent pedestal and cooperating therewith to limit relative movement between the upper frame member and the equalizer longitudinally as well as laterally of the truck.

In the drawings,

Figure 1 is a half top plan view of a railway car truck embodying my invention, only one-half of the truck being illustrated inasmuch as it is symmetrical about its longitudinal center line, one end of the upper frame member being broken away in order more clearly to illustrate the equalizer therebeneath.

Figure 2 is a side elevation of the structure shown in Figure 1.

Figure 3 is an end view taken from the left as seen in Figures 1 and 2, and Figure 4 is a sectional view taken in the transverse vertical plane indicated by the line 4—4 of Figure 2.

Describing my invention in detail, the equalizer or lower frame member 2 comprises a central portion 4 of box-section with the inboard and outboard side walls 6 and 8 and the top and bottom chords 10 and 12, as best seen in the sectional view of Figure 4. At each end thereof the equalizer member 2 comprises an end portion formed with spaced inner and outer pedestals or jaws 14 and 16 and the intermediate pedestal opening 18 formed and arranged for the reception of the journal box 20 associated in the customary manner with the adjacent end of the wheel and axle assembly 22.

Each inner pedestal 14 comprises the transverse web 23 extending between the inboardly and outboardly flared continuations 24 and 26 respectively of the side walls 6 and 8, and the pedestal 16 comprises the transverse web 28 extending between the walls 24 and 26, said webs 23 and 28 merging with the top wall 30 seated as at 32 upon the adjacent journal box 20.

Formed within the pedestal 14 is a spring seat 33 afforded by the widened extremity of the top chord 10, and within the pedestal 16 is a spring seat 34 formed on the horizontal web 36 extending between the walls 24 and 26, said seats 33 and 34 being substantially coplanar and affording support for spring groups diagrammatically indicated at 38, 38.

A tie bar 40 extends between the pedestals 14 and 16, said bar being secured at 42, 42 to the lower extremities of said pedestals and functioning to prevent the same from pinching the journal box 20 therebetween as load is applied to the spring seats 33 and 34 by the top frame member 44 which is supported from the springs 38, 38, as hereinafter described.

The top member 44 comprises the side rail 46 at each side thereof and the spaced substantially parallel transoms 48 and 50 extending between the side rails and integral therewith, said transoms being formed and arranged to support therebetween a bolster (not shown) in conventional manner.

The side rail 46 is of box-section (Figure 4) and at each end thereof is formed with a depending leg or pedestal 52 received between the walls 24 and 26 of the adjacent pedestal jaw 14 for cooperation with the transverse web 23 thereof to limit relative movement between the members 2 and 44 longitudinally of the truck, said leg 52 cooperating with the inboard and outboard lugs 54 and 56 (Figure 1) formed on the walls 24 and 26 respectively for limiting relative movement between the members 2 and 44 transversely of the truck. It may be noted that the leg 52 and the cooperating surfaces of the pedestal jaw 14 are preferably provided with liners or wear plates 58, 58.

The side rail 46 is formed adjacent each end thereof with a spring seat 60 on the bottom chord thereof and inwardly of the leg 52, said side rail 46 also being provided on the bottom chord thereof with the spring seat 62 disposed outwardly of the adjacent leg 52. The seats 60 and 62 are substantially coplanar and afford support for the member 44 on the associated springs 38, 38.

It may be noted that the equalizer member 2

is formed at each end thereof with an inturned bracket 64 affording a fulcrum for an associated brake element, and intermediate its ends the equalizer is formed with the inturned upstanding brake hanger brackets 66, 66 formed and arranged to afford support for associated brake elements. Adjacent each bracket 66 the central portion 4 of the equalizer is formed with a transverse slot 67 for the reception of an associated brake lever, and approximately midway intermediate its ends the equalizer is formed with the upstanding brake cylinder support bracket 68.

The brake mechanism associated with the various support structures illustrated is particularly shown and described in my above-mentioned co-pending application, and the brake rigging is being eliminated in the present application in order to clarify the illustration of the truck which embodies the present invention.

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 truck, spaced wheel and axle assemblies comprising journal boxes, an equalizer at each side of the truck comprising a central portion of box-section having top and bottom chords and inboard and outboard walls, an end portion at each end of said equalizer comprising spaced pedestals, each having a transverse web extending between continuations of said inboard and outboard walls, a top web extending between said transverse webs and seated on the adjacent box, spring seats within respective pedestals, one of said seats being afforded by the adjacent extremity of said top chord, and the other of said seats being afforded by a transverse web extending between said continuations, springs on said seats, and an upper frame member comprising legs housed in the inner of said pedestals, said upper member having spring seats inwardly and outwardly of said legs and bearing upon the associated springs, each leg cooperating with the adjacent transverse web to limit relative longitudinal movement between said equalizer and said upper member, and each leg cooperating with means on the adjacent portions of said continuations for limiting relative transverse movement between said upper member and said equalizer.

2. In a railway car truck, spaced wheel and axle assemblies comprising journal boxes, an equalizer at each side of the truck comprising a central portion of box-section having top and bottom chords and inboard and outboard walls, an end portion at each end of said equalizer comprising spaced pedestals, each having a transverse web extending between continuations of said inboard and outboard walls, a top web extending between said transverse webs and seated on the adjacent box, spring seats within respective pedestals, one of said seats being afforded by the adjacent extremity of said top chord, and the other of said seats being afforded by a transverse web extending between said continuations, springs on said seats, an upper frame member comprising legs housed in the inner of said pedestals, said upper member having spring seats inwardly and outwardly of said legs and bearing upon the associated springs, and a tie bar extending between the spaced pedestals of each end portion beneath the associated journal box.

3. In a railway car truck, spaced wheel and axle assemblies comprising journal boxes, an equalizer at each side of the truck comprising a central portion of box-section having top and bottom chords and inboard and outboard walls, an end portion at each end of said equalizer comprising spaced pedestals, each having a transverse web extending between continuations of said inboard and outboard walls, a top web extending between said transverse webs and seated on the adjacent box, spring seats within respective pedestals, one of said seats being afforded by the adjacent extremity of said top chord, and the other of said seats being afforded by a transverse web extending between said continuations, springs on said seats, and an upper frame member comprising legs housed in the inner of said pedestals, said upper member having spring seats inwardly and outwardly of said legs and bearing upon the associated springs.

4. In an equalizer for a railway car truck, a member having a central portion of box-section with inboard and outboard side walls and top and bottom chords, said member having end portions each comprising spaced pedestals, each of said pedestals having a transverse web extending between continuations of said side walls and merging with a top wall extending between said webs, spring seats on said top chord at opposite extremities thereof, said seats being disposed within the inner pedestals, and other spring seats formed on transverse webs in the outer pedestals extending between said continuations.

5. In a railway car truck, spaced wheel and axle assemblies comprising journal means, an equalizer having a portion at each end thereof supported by the associated journal means and comprising spaced vertical walls embracing the same, resilient means mounted on said equalizer inwardly and outwardly of each assembly, a frame member supported by said resilient means, and spaced depending legs on said frame member adjacent opposite extremities thereof recessed within adjacent portions of said equalizer and cooperating with abutment means therein to limit relative movement between said frame member and said equalizer laterally of the truck, each of said legs being engageable with the associated wall to limit relative movement between said frame member and said equalizer longitudinally of the truck.

6. In a railway car truck, spaced wheel and axle assemblies comprising journal means, an equalizer carried at each end thereof by the associated journal means and comprising a transverse substantially vertical wall inwardly thereof, resilient means on said equalizer inwardly and outwardly of each assembly, a truck frame supported by said resilient means, and spaced depending legs on said frame adjacent opposite ends thereof and cooperating with inboard and outboard walls of said equalizer to limit relative lateral movement between said frame and said equalizer, each of said legs being engageable with the adjacent vertical wall to limit relative longitudinal movement between said frame and said equalizer.

7. In a railway car truck, spaced wheel and axle assemblies comprising journal boxes, an equalizer carried at each end thereof by the associated box and comprising spaced walls embracing the same, springs mounted on said equalizer inwardly and outwardly of each box, a frame member supported by said springs, and spaced depending elements rigidly connected to said frame member and depending therefrom adjacent opposite extremities thereof, said elements

being received within portions of said equalizer for cooperation with abutment means therein to limit relative lateral movement between said frame member and said equalizer, each of said elements being adapted to engage the adjacent of said walls to limit relative longitudinal movement between said frame member and said equalizer.

8. In a railway car truck, spaced wheel and axle assemblies comprising journal boxes, an equalizer carried at each end thereof by the associated box and comprising spaced walls inwardly and outwardly thereof, springs mounted on said equalizer inwardly and outwardly of each box, a frame member supported by said springs, and spaced depending elements rigidly connected to said frame member and depending therefrom adjacent opposite extremities thereof, said elements being received within portions of said equalizer for cooperation with abutment means therein to limit relative lateral movement between said frame member and said equalizer, each of said elements being spaced at all times from the adjacent box by the adjacent wall and being engageable therewith and vertically movable thereagainst, whereby relative longitudinal movement between said frame member and said equalizer is limited.

CARL E. TACK.