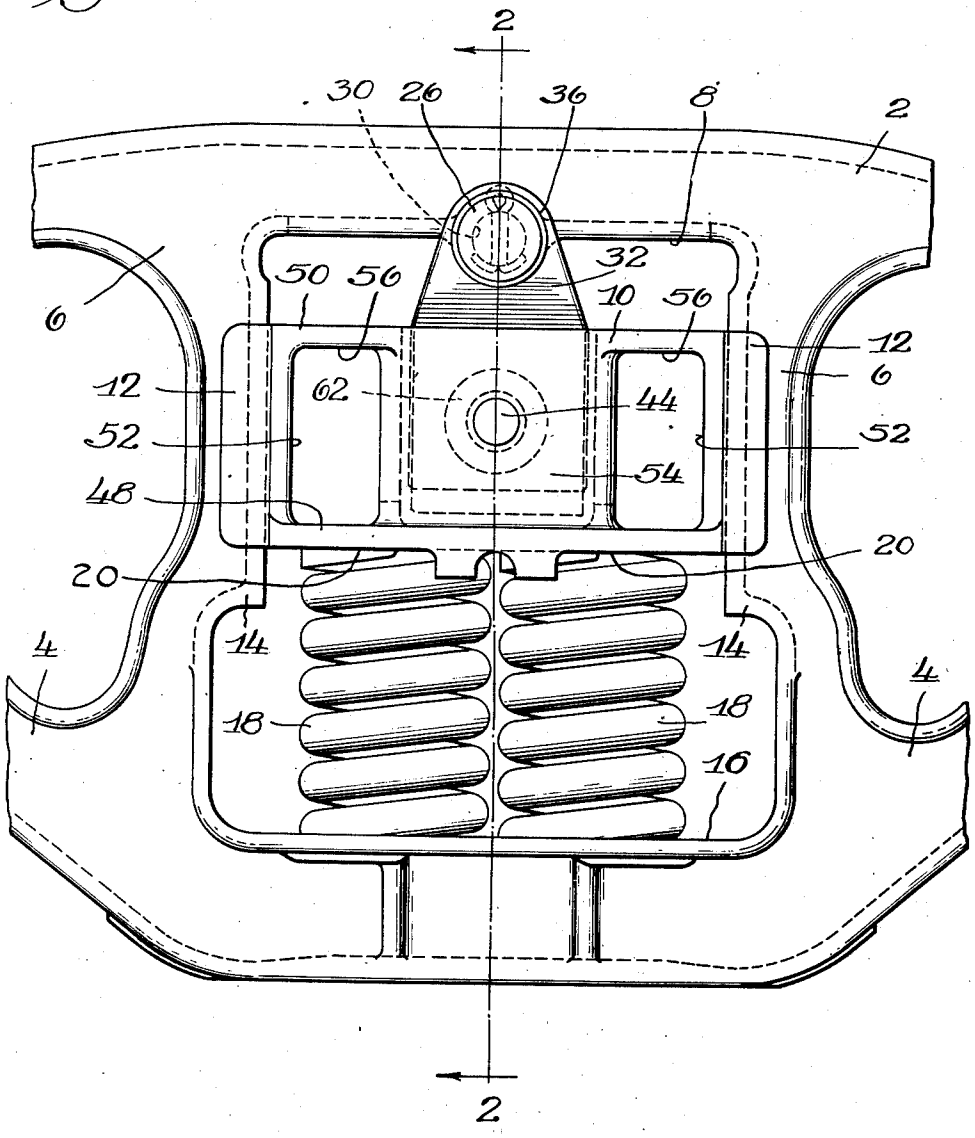
Nov. 14, 1944. E. J. MAATMAN ET AL 2,362,654

CAR TRUCK

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Fig. 1



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Fig. 3

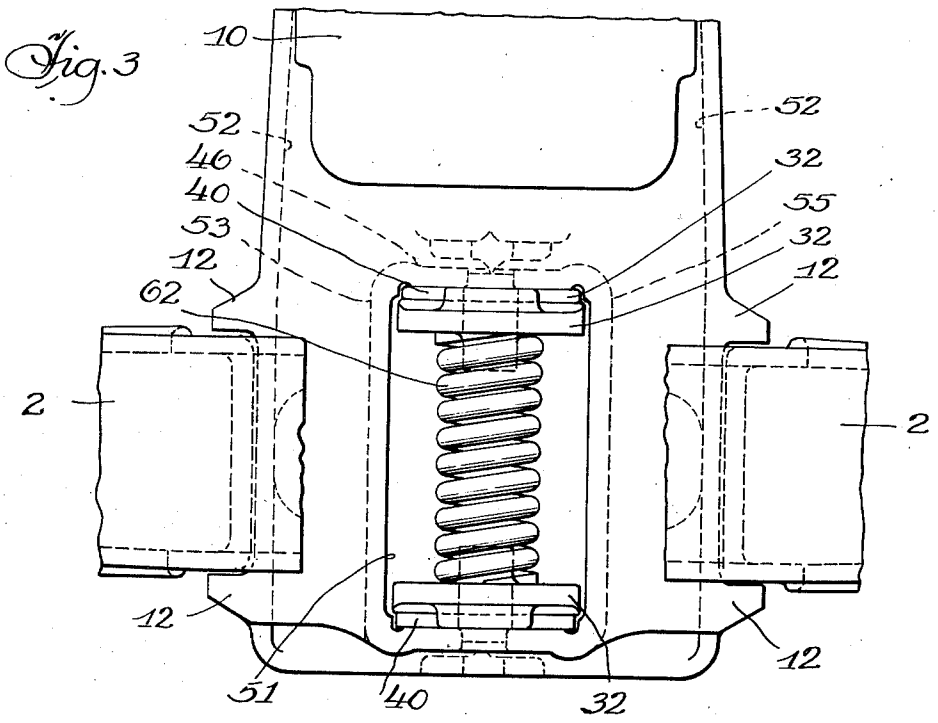
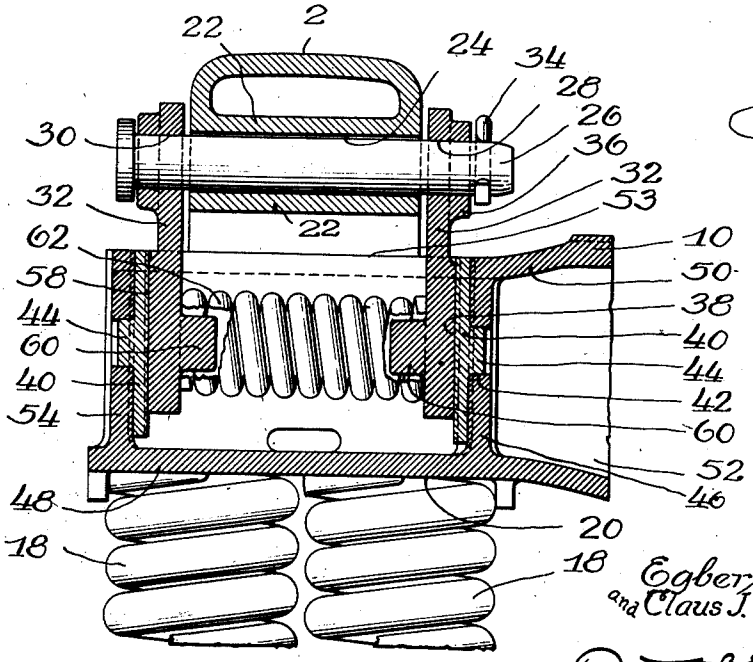


Fig. 2



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Fig. 4

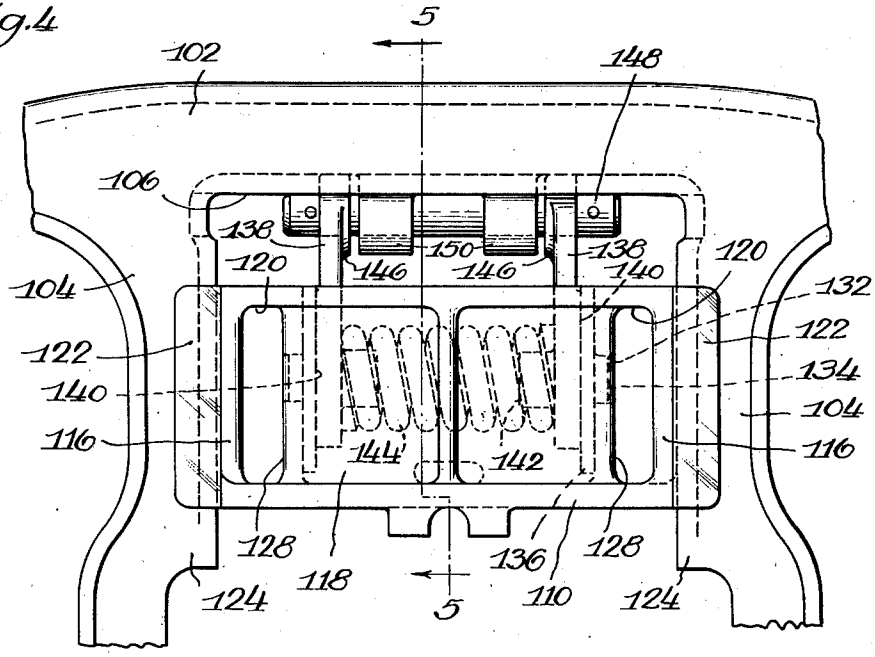
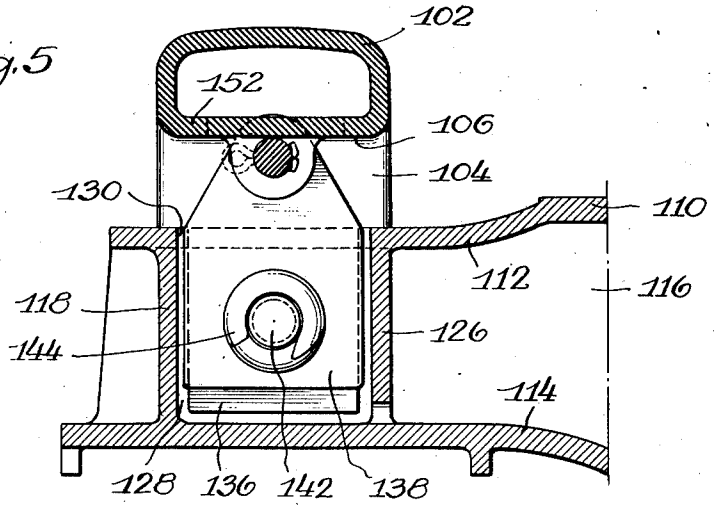


Fig. 5



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2,362,654

CAR TRUCK

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Application May 15, 1943, Serial No. 487,094

11 Claims. (Cl. 105—193)

Our invention relates to a railway car truck and especially to such a type of truck wherein may be incorporated effective snubbing or friction control means to eliminate, or substantially eliminate, the bouncing characteristics of coil springs normally used to support the bolster from the side frame.

The general purpose of our invention is to devise such a railway car truck which will be relatively inexpensive and convenient to manufacture while at the same time meeting the various standard requirements of the railroads as to performance. Our invention contemplates an arrangement suitable for any car truck having relatively movable members such as a side frame and bolster on one of which may be supported a plurality of friction panels conveniently arranged for engagement with friction plates supported on the others of said members.

A more specific object of our invention is to devise a railway car truck utilizing a more or less standard form of side frame and a bolster modified to incorporate our novel snubbing arrangement, said snubbing device including a plurality of friction panels which may be supported in novel manner from the side frame for cooperative engagement with friction walls on the bolster or wear plates secured thereto.

Our invention comprehends an arrangement wherein the side frame compression member may be so constructed and arranged as to afford support for a plurality of friction panels which may be suspended therefrom and have frictional engagement with friction panels mounted in the bolster end for that purpose. Within the bolster end may also be housed resilient means for urging the friction plates or panels into engagement with the friction walls of the bolster.

In the drawings,

Figure 1 is a fragmentary side elevation of a railway car truck embodying our invention, the end portions of the truck structure being omitted as not pertinent to our invention.

Figure 2 is a fragmentary sectional view through the railway car truck shown in Figure 1, the section being taken in the transverse vertical plane approximately bisecting the truck, as indicated by the line 2—2 of Figure 1.

Figure 3 is a fragmentary top plan view of the truck structure shown in Figures 1 and 2 with a portion of the compression member of the side frame cut away to illustrate more clearly the novel snubbing arrangement.

Figure 4 is a fragmentary side elevation of a railway car truck embodying a modification of our invention, and Figure 5 is a sectional view in transverse vertical planes adjacent the plane bisecting the truck transversely, as indicated by the line 5—5 of Figure 4.

Referring in detail first to the arrangement illustrated in Figures 1 to 3, it may be noted that our novel truck structure utilizes a truss side frame of generally conventional form including the compression member 2, the tension member 4 with spaced columns 6, 6 merging therewith to form the central bolster opening 8 within which may be received the end of the bolster generally designated 10, said bolster end having the usual gibs 12, 12 which may have cooperative engagement with the guide portions 14, 14 of adjacent columns in conventional manner. On the tension member below the bolster opening 8 may be formed the usual spring seat 16 whereon may be seated a group of coil springs 18, 18 affording support as at 20 for the bolster 10.

Over the window opening 8 the compression member 2 may have a cylindrical web 22 (Figure 2) arranged transversely of the frame with the central opening 24 cored away to accommodate the retaining pin or bolt assembly 26 which may extend therethrough and afford support at its inboard and outboard ends as at 28 and 30 for the inboard and outboard friction plates or panels 32, 32. These panels 32, 32 may have a slip fit with the bolt 26 and may have some clearance from the compression member 2, as well as from the head of said bolt and from the retaining cotter 34, in order to permit said friction panels to shift somewhat in position as wear takes place and also to accommodate relative lateral movement of the side frame and bolster. The plan of each friction panel may well be seen from consideration of the view of Figure 1. Each panel is formed with a boss 36 adjacent its upper end around the bolt opening to afford large wear areas therefor, and the lower portion of the friction panel is made relatively thick in order to afford a wearing surface for engagement as at 38 with the adjacent wear plate 40 supported from the adjacent transverse wall of the bolster. The inboard wear plate 32 may have cooperative engagement with the wear plate 40, supposed as at 42 by the lug 44 received within the fragmentary vertical transverse wall 46 of the bolster 10. Said bolster 10 may have a general box-section end portion with the bottom wall 48, the top wall 50, side walls 52, 52, and the end wall 54 which may be cored away at each side thereof as at 56, 56 (Figure 1). Within the end portion of the bolster the top wall 50 thereof may be cored away as at 51 (Figure 3)

to form a rectangular opening, the lateral margins of which may be defined by the spaced vertical walls 53 and 55 extending longitudinally of the bolster and merging with the before-mentioned fragmentary wall 46, as well as with the end wall 54. The outboard panel 32 may have frictional engagement as at 58 with the wear plate 40 mounted on the bolster end wall 54, said wear plate 40 being fixed with respect to said wall by the positioning lug 44. Each panel 32 may have projecting from its nonfriction surface a boss or lug 60 affording positioning means for one end of the spring 62 which may be compressed therebetween and act to urge said friction plates into engagement with the adjacent wear plates.

The modification illustrated in Figures 4 and 5 differs from that just described in that the friction plates are arranged to cooperate with walls extending longitudinally of the bolster rather than transversely thereof. In the modification now under consideration, the side frame is a conventional truss structure with a compression member 102 merging with the spaced columns 104, 104 to form the central bolster opening 106 within which may be received the end of the bolster 110 which may be supported in usual manner by the conventional spring group (not shown) carried in said opening 106. The bolster 110 may have a box-section end portion with a top wall 112, a bottom wall 114, side walls 116, 116, and the end wall 118 which may be cored away adjacent the opposite edges thereof as at 120, 120 (Figure 4), said bolster also having gibs 122, 122 in cooperative engagement with the guide portions 124, 124 of adjacent columns. Spaced from the end wall 118 of the bolster may be the transverse wall 126 (Figure 5) merging with the fragmentary intermediate webs or walls 128, 128 (Figure 4) to form the rectangular cavity 130. Each web or wall 128 may be cored away centrally thereof as at 132 (Figure 4) for reception of the positioning lug 134 of the adjacent wear plate 136 which may be mounted thereon for slidable cooperation with the adjacent friction plate or panel 138. Each friction panel 138 may be generally similar in plan to that of the previous modification with the relatively thickened lower portion having frictional engagement as at 140 with the adjacent wear plate 136 and having on its opposite face a lug or boss 142 affording positioning means for the spring 144 which may be compressed between the spaced friction plates. On the upper end of each friction panel 138 may be formed a boss 146 affording adequate bearing for the retaining pin or bolt 148 with which each plate may have a slip fit. The retaining bolt 148 may be supported from the hollow lugs 150, 150 depending from the bottom web 152 of the compression member 102, and the plates 138, 138 may have clearance from said lugs in order to accommodate lateral movement of the bolster with respect to said frame.

In each of these modifications, it will be clear that we have devised a novel means of snubbing the movement of the bolster on its supported springs with respect to the side frame on which the springs may be carried. The snubbing means in each case consists of a plurality of spaced friction plates supported from the side frame and having cooperative engagement with spaced friction surfaces mounted on the cooperating bolster, and the friction plates are urged into engagement with the friction surfaces by resilient means compressed therebetween. In each case, the friction parts are assembled with the bolster, which is entered into the side frame bolster opening in conventional manner before the insertion of the supporting spring group.

It is to be understood that we do not wish to be limited by the exact embodiments of the device shown which are 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.

We claim:

1. In a railway car truck, a side frame having tension and compression members and spaced columns defining a central bolster opening, springs on said tension member in said opening, a bolster having an end projecting into said opening and supported on said springs, and cooperating friction means on said side frame and bolster comprising spaced friction surfaces within said bolster, a removable retaining pin supported from said compression member, a plurality of friction panels pivotally and slidably supported from said pin in cooperative engagement with said surfaces respectively, and resilient means compressed between said panels, each of said friction panels having plane face engagement with the adjacent friction surface.

2. In a railway car truck, a truss side frame having tension and compression members and spaced columns defining a bolster opening, springs on said tension member in said opening, and a bolster having an end seated on said springs in cooperative engagement with said columns, said bolster having an upwardly opening cavity defined by longitudinal and transverse walls, certain of said walls having friction plates supported thereon, friction panels pivotally and slidably supported from said compression member in engagement with said plates respectively, and resilient means compressed between said panels, each of said panels engaging the adjacent plate along a plane surface.

3. In a railway car truck, a side frame having a compression member and spaced columns defining in part a bolster opening, a bolster having an end extending into said opening in cooperative engagement with said columns, a cavity in the top of said bolster defined in part by spaced friction walls, a plurality of panels pivotally and slidably supported from said compression member for frictional engagement with said walls respectively, and resilient means normally urging said panels against said walls, each of said panels having clearance from said compression member to permit relative lateral movement with respect thereto while maintaining normal frictional engagement with the adjacent friction wall.

4. In a railway car truck, a side frame having a compression member and spaced columns defining in part a bolster opening, a bolster having an end extending into said opening in cooperative engagement with said columns, a cavity in the top of said bolster defined in part by spaced friction walls, pivot means hung at spaced points from said compression member, a plurality of panels slidably supported from said pivot means for frictional engagement with said walls respectively, and resilient means normally urging said panels against said walls, said slidable support accommodating relative movement of said panels with respect to said compression mem-

ber while maintaining normal engagement with said friction walls.

5. In a railway car truck, a side frame having tension and compression members and spaced columns defining a central bolster opening, springs on said tension member in said opening, a bolster having an end projecting into said opening and supported on said springs, and cooperating friction means on said side frame and bolster comprising laterally spaced friction surfaces within said bolster, a removable retaining pin slidably supported from said side frame, a plurality of friction panels pivotally hung from said pin in cooperative engagement with said surfaces respectively, and resilient means compressed between said panels.

6. In a railway car truck, a truss side frame having tension and compression members and spaced columns defining a bolster opening, springs on said tension member in said opening, and a bolster having an end seated on said springs in cooperative engagement with said columns, said bolster having an upwardly opening cavity defined by longitudinal and transverse walls, certain of said walls having friction plates supported thereon, a pivot pin slidably supported at spaced points from said compression member, friction panels swingably supported from said pivot pin in engagement with said plates respectively, and resilient means compressed between said panels.

7. In a railway car truck, a truss side frame having a compression member and spaced columns defining in part a central bolster opening, a bolster having an end projecting into said opening in cooperative engagement with said columns, spaced friction walls in said bolster, a retaining pin supported from said compression member, friction panels slidably mounted on said pin in cooperative engagement with said friction walls respectively, a coil spring compressed between said panels, and positioning means on each panel for said spring.

8. In a railway car truck, a truss side frame having a compression member and spaced columns defining in part a central bolster opening, a bolster having an end projecting into said opening in cooperative engagement with said columns, spaced friction walls in said bolster, a retaining pin rotatably supported from said compression member, friction panels slidably mounted on said pin for lateral movement with respect to said frame and respectively engaging said walls, and resilient means compressed between said panels.

9. In a railway car truck, a truss side frame having a compression member and spaced columns defining in part a central bolster opening, a bolster having an end projecting into said opening in cooperative engagement with said columns, inboard and outboard friction walls in said bolster, wear plates on said walls, a retaining pin supported from said compression member, friction panels slidably mounted on said pin for relative movement with respect to said frame and in engagement respectively with said plates, and resilient means compressed between said panels.

10. In a railway car truck, a truss side frame having a compression member and spaced columns defining in part a central bolster opening, a bolster having an end projecting into said opening in cooperative engagement with said columns, spaced friction walls in said bolster adjacent respective columns, a retaining pin pivotally and slidably supported from said compression member, friction panels mounted on said pin in cooperative engagement with said friction walls respectively, resilient means compressed between said panels, and means on said panels positioning said resilient means.

11. In a railway car truck, a side frame having a compression member and spaced columns defining in part a bolster opening, a bolster having an end extending into said opening in cooperative engagement with said columns, a cavity in the top of said bolster defined in part by spaced friction walls, spaced means on said compression member slidably supporting a pivot pin, a plurality of panels swingably supported from said pin for frictional engagement with said walls respectively, resilient means compressed between said panels, and positioning means on respective panels affording support for opposite ends of said resilient means.

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