Oct. 25, 1949. L. A. LEHRMAN 2,485,974

SNUBBED TRUCK

Filed Aug. 8, 1945 2 Sheets-Sheet 1

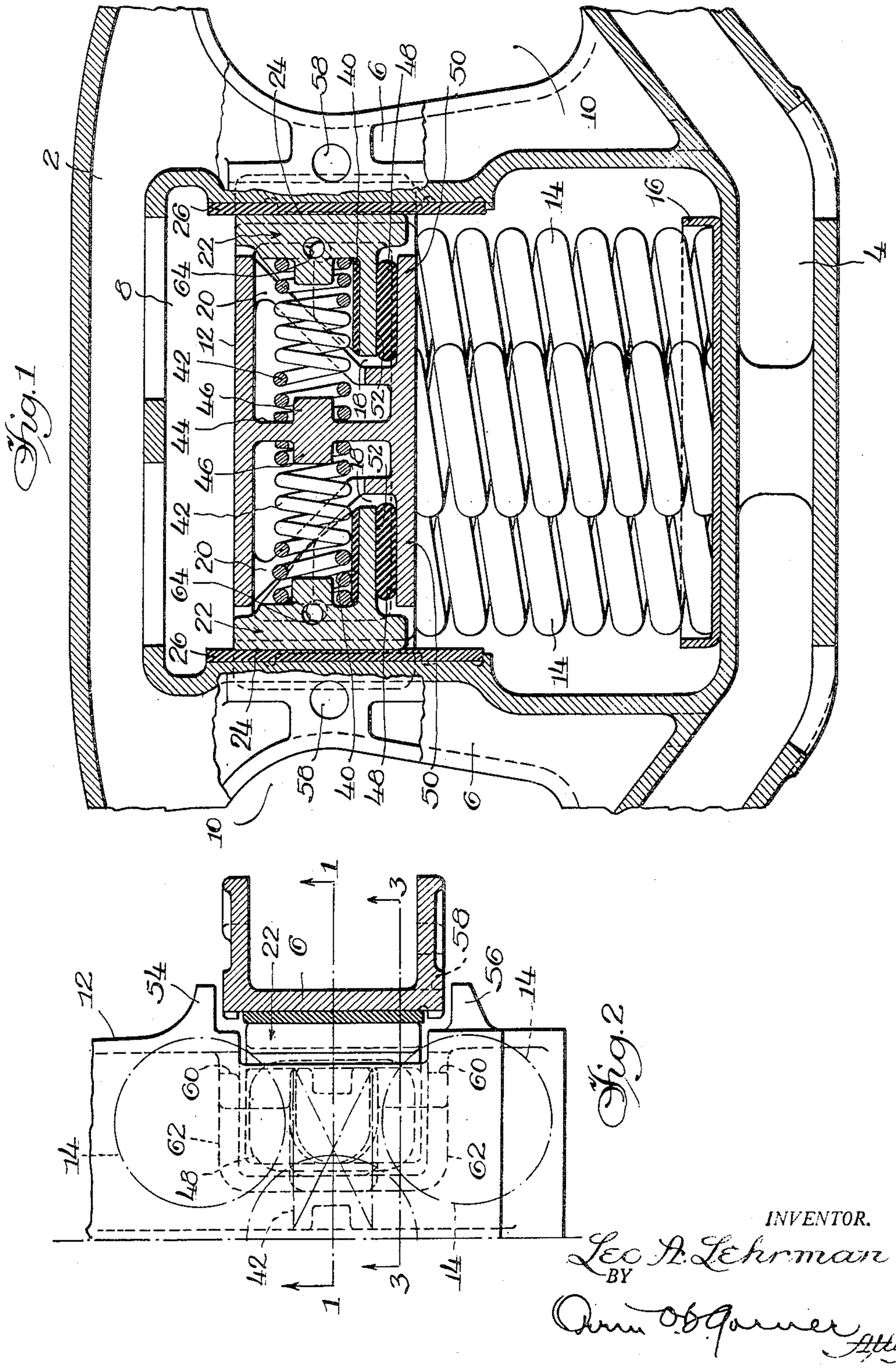

Fig. 1

Fig. 2

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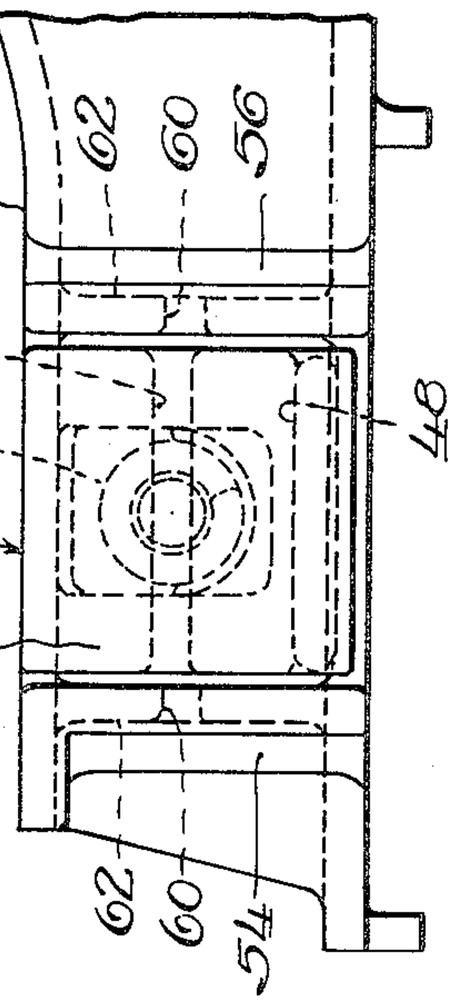

Fig. 4

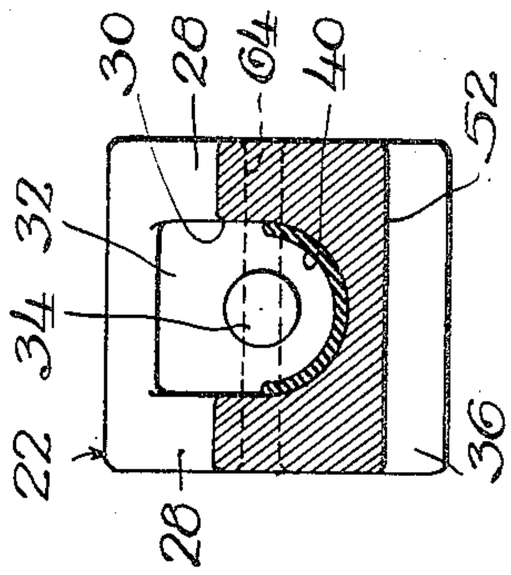

Fig. 7

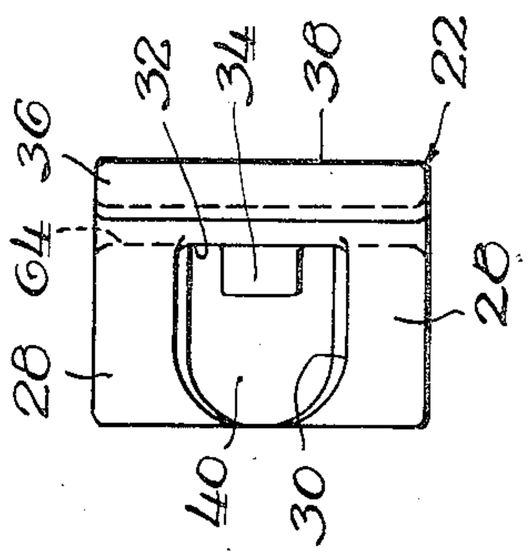

Fig. 6

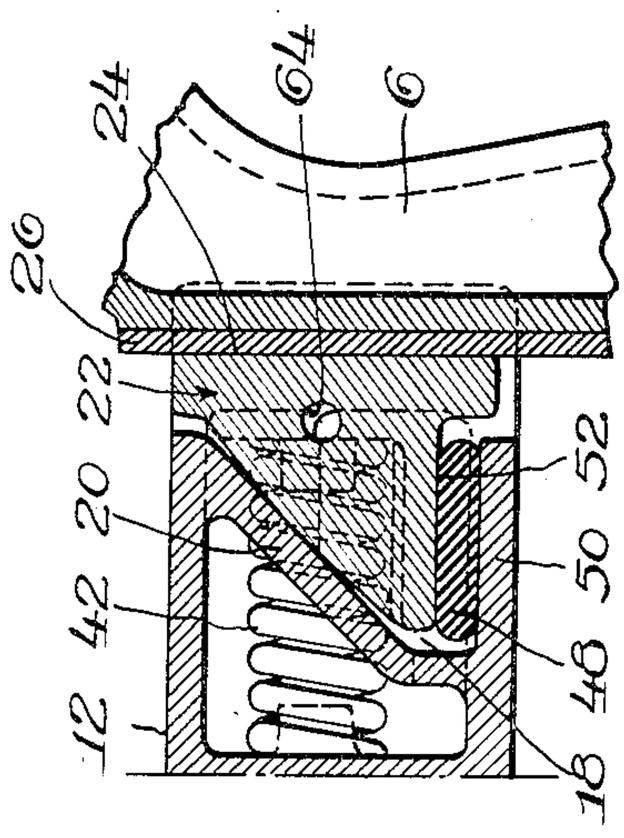

Fig. 3

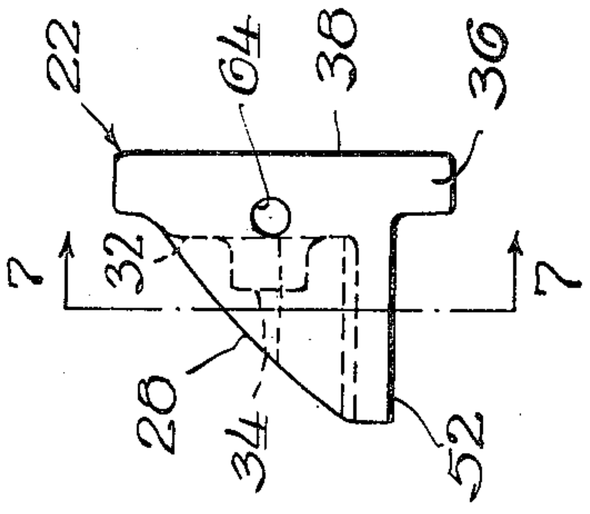

Fig. 5

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SNUBBED TRUCK

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Application August 8, 1945, Serial No. 609,533

11 Claims. (Cl. 105—197)

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This invention relates to railway car trucks and more particularly to a novel truck incorporating means for dampening oscillations of the spring-supported truck bolster.

A general object of the invention is to design a truck such as above described wherein dampening means of relatively great capacity is afforded for frictionally resisting the bolster oscillations.

Another object of the invention is to provide a truck wherein a friction shoe is housed in each side of the bolster in wedge engagement therewith and in frictional engagement with an adjacent side frame surface, a pair of actuating springs being compressed respectively between the shoe and perpendicularly related abutment surfaces of the bolster.

A more specific object of the invention is to design a truck such as above described wherein each friction shoe is urged against the side frame friction surface by a horizontal spring compressed between the shoe and a vertical bolster wall, said shoe being urged into wedge engagement with the bolster by means of a spring preferably in the form of a resilient pad compressed between the shoe and a generally horizontal abutment surface of the bolster.

Still another object of the invention is to provide means for damping vibrations of the horizontal shoe-actuating spring in an arrangement such as that above described.

The invention comprehends a friction shoe of novel form, said shoe being preferably formed as a casting or forging with spaced wedge surfaces and a spring-positioning cavity therebetween. The shoe is formed with a spring seat within said cavity, and a resilient pad is vulcanized to the shoe within said cavity for dampening vibrations of an associated spring bearing against said seat.

In the drawings,

Figure 1 is a sectional view, partly in elevation, of a railway car truck embodying the invention, the section being taken in a vertical plane approximately bisecting the side frame as indicated by the line 1—1 of Figure 2.

Figure 2 is a fragmentary top plan view of the structure shown in Figure 1 with the side frame shown in section through one of the columns thereof.

Figure 3 is a sectional view taken in the longitudinal vertical plane indicated by the line 3—3 of Figure 2.

Figure 4 is a fragmentary side elevation of the truck bolster and associated friction device shown in Figures 1–3.

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Figures 5–7 inclusive illustrate in detail one of the novel identical friction shoes utilized in the arrangement, Figure 5 being a side elevation of the shoe, Figure 6 being a top plan view thereof, and Figure 7 being a sectional view taken in the plane indicated by the line 7—7 of Figure 5.

Describing the invention in detail and referring first to Figures 1–4, the side frame is a conventional truss type frame comprising a compression member 2, a tension member 4, and a column 6 connected therebetween adjacent each end of the frame and defining a central bolster opening 8 and a window opening 10 adjacent the end of the frame. A box-section bolster 12 is supported within the bolster opening 8 by a plurality of springs 14, 14 which are seated on and confined by a spring plate 16 mounted on the top web of the tension member 4. It will be understood by those skilled in the art that if desired the spring plate 16 may be eliminated, and the springs 14, 14 may bear directly against the tension member 4 which may be provided with suitable positioning means for said springs.

The bolster 12 is provided with a pocket 18 at each side thereof and with a pair of spaced diagonal ledges or walls 20, 20 within said pocket. A friction shoe generally designated 22 is received within the pocket in frictional engagement as at 24 with a liner 26 mounted on the adjacent column 6. The friction shoe is shown in detail in Figures 5–7 and is preferably in the form of a hollow casting or forging comprising spaced wedge faces or ledges 28, 28 and a cavity 30 therebetween. The shoe is provided with a spring seat 32 and a spring-positioning boss 34 in the cavity 30 on the rear surface of the main or front friction wall 36, the forward surface of which is formed with a friction face 38 for frictional engagement at 24 with the column liner 26 in the manner above described. The bottom of the cavity 30 is arcuately formed to accommodate an arcuate resilient pad 40 which may be secured to the shoe as by vulcanizing and functions to dampen vertical oscillations of the horizontal shoe-actuating spring 42 (Figures 1 and 3) which is seated against the vertical center rib 44 of the bolster 12 and is positioned by a boss 46 thereon.

It will be understood that the horizontal spring 42 is operable to thrust the shoe 22 directly against the column liner 26, and said spring 42 extends between the spaced bolster walls 20, 20 and into the friction shoe cavity 30 between the spaced wedge faces 28, 28, thereby affording a relatively compact structure. A resilient pad 48

is compressed between the bottom wall 50 of the bolster and the bottom spring seat 52 of the friction shoe, thereby urging the latter upwardly so that the wedge faces 28, 28 on the shoe are engaged with the diagonal walls 20, 20 of the bolster and the shoe is thereby urged outwardly of the pocket 18 against the column liner 26. By means of this arrangement both springs 42 and 48 are operable to actuate the shoe to frictional engagement at 24 with the column liner 26, and the spring 48 is also operable to prevent relative vertical movement between the shoe and the bolster as the latter oscillates vertically on its supporting springs 14. The resilient pad 40 restrains vibration of the horizontal coil spring 42 thereby decreasing stresses thereon and lengthening the life thereof in service.

It may be noted, as best seen in Figure 2, that the bolster 12 is provided with inboard and outboard guide lugs 54 and 56 at opposite sides of each column 6 to afford an interlock therewith, and the outboard face of each column is perforated as at 58 to accommodate reception of a tool, such as a crowbar, whereby the bolster may be urged against the other column to force the friction shoe associated with said column inwardly into the bolster pocket 18, whereupon the shoe may be keyed to the bolster by any suitable key means (not shown) inserted through aligned openings 60, 60 in the inboard and outboard walls 62, 62 of the bolster and through an opening 64 in the friction shoe. By means of this arrangement the friction devices may be rendered inoperative to facilitate assembly and disassembly of the bolster and side frame.

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, a side frame comprising a column, a bolster spring-supported from said frame adjacent said column, a pocket in said bolster, spaced wedge surfaces on said bolster within said pocket, a friction shoe engaged with said surfaces and frictionally engaging said column, a horizontal coil spring compressed between said shoe and a wall of said bolster for urging said shoe against the column, a resilient pad compressed between vertically spaced abutment surfaces on said shoe and said bolster respectively for urging said shoe against said surfaces, and an arcuate resilient pad carried by said shoe and engaging the outer perimeter of said spring for resisting vibrations thereof.

2. In a railway car truck, a side frame comprising a column, a bolster resiliently supported from said frame adjacent said column, a friction element in wedge engagement with wedge means on the bolster and in frictional engagement with the column, spring means compressed between the bolster and the shoe for urging the latter along said wedge means into said frictional engagement with the column, a horizontal coil spring compressed between the bolster and the element for urging the latter against said column independently of said wedge means, and resilient means carried by the shoe and engaging said coil spring for resisting vibrations thereof.

3. In a railway car truck, a side frame comprising spaced columns, a bolster spring-supported from said frame between said columns, and friction means comprising pockets in opposite sides of said bolster, friction shoes in respective pockets and wedged between said bolster and respective columns, resilient means carried by the bolster for urging said shoes to the wedged positions thereof, a horizontal coil spring housed within the bolster and compressed against each shoe for urging the same against the adjacent column, and resilient means carried by each shoe for dampening vibrations of the associated coil spring.

4. In a railway car truck, a side frame comprising a column, a bolster spring-supported from said frame, and friction means comprising a pocket in said bolster, spaced wedge surfaces on said bolster in said pocket, a friction shoe engaging said column and comprising spaced wedge faces engaging respective surfaces, a cavity in said shoe between said faces, a spring seat on said shoe within said cavity, a precompressed horizontal spring reacting between and bearing against the bolster and said seat, and another spring compressed between the bolster and said shoe for urging the faces on the latter against said surfaces.

5. In a railway car truck, a side frame comprising a column, a bolster resiliently supported from said frame, friction means comprising a pocket in said bolster, spaced wedge surfaces on said bolster in said pocket, a friction element in wedge engagement with said surfaces and in frictional engagement with a surface on said column, a horizontal coil spring extending between said surfaces and compressed against said bolster and said element, another spring compressed between the bolster and said element for urging the latter against said surfaces, and resilient means carried by said element for resisting vibration of said coil spring.

6. A friction shoe comprising spaced wedge faces and a cavity extending therebetween, a spring seat on said shoe within said cavity, an external friction surface on said shoe angularly related to said wedge faces, and an arcuate resilient pad mounted on said shoe within said cavity, said pad being disposed beneath the level of said seat.

7. In a friction shoe, a hollow member with spaced wedge surfaces and a cavity therebetween, a spring seat on said member within said cavity, and a resilient pad mounted on said member within said cavity at one side of said seat, said pad extending approximately perpendicular to said seat.

8. In a friction shoe, a member with a main wall comprising a friction face on one side thereof and a spring seat on the opposite side thereof, spaced diagonal ledges formed on said wall at opposite sides of said seat, and a resilient pad mounted on said member between said ledges and spaced from said seat.

9. A friction shoe comprising a wall with a friction surface on one side thereof and a spring seat on the other side thereof, another wall angularly related to the first-mentioned wall, and resilient means carried by said other wall at one side of said seat for dampening vibrations of an associated spring seated thereagainst.

10. A friction shoe comprising a wall with a friction surface on one side thereof and a spring seat on the other side thereof, a wall extending angularly from the first-mentioned wall, and a resilient pad mounted on said other wall adja-

cent said seat for dampening vibrations of an associated spring seated thereagainst.

11. A friction shoe comprising a wall with a friction surface on one side thereof and a spring seat on the other side thereof, a diagonal wall integrally formed with the first-mentioned wall and affording a wedge surface at one side of said seat, and resilient means carried by a wall of said shoe adjacent said seat for dampening vibrations of an associated spring seated thereagainst.

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