Aug. 19, 1947. R. J. OLANDER 2,425,822

RAILWAY CAR TRUCK

Filed May 19, 1944

Fig. 1

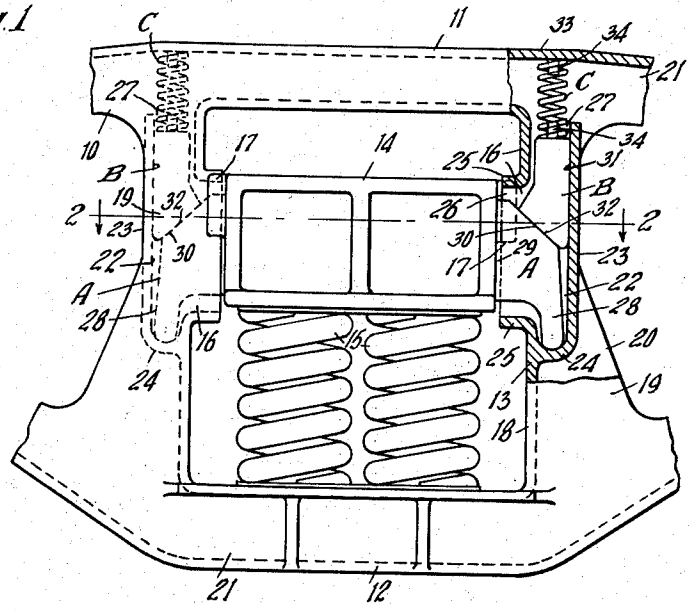


Fig. 2

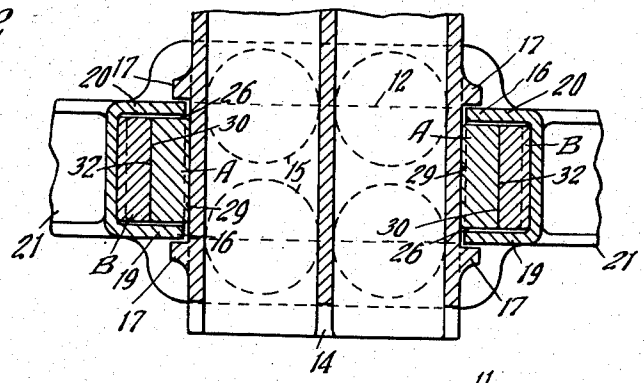


Fig. 3

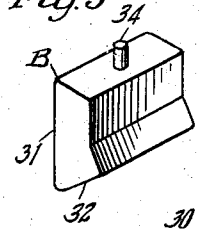


Fig. 4

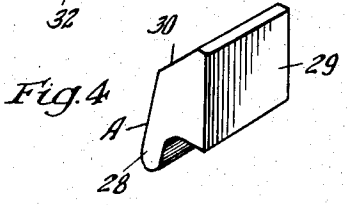
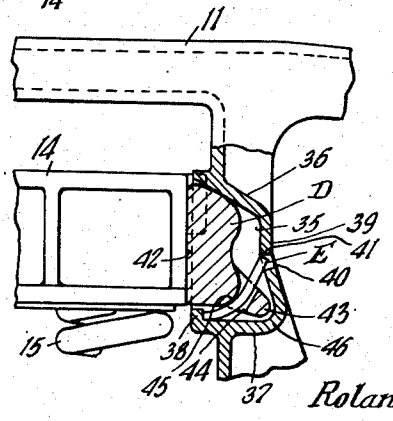


Fig. 5



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RAILWAY CAR TRUCK

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4 Claims. (Cl. 105—197)

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This invention relates to improvements in railway car trucks.

One object of the invention is to provide in a railway car truck means for effectively snubbing the action of the usual truck springs by frictionally resisting upward and downward movement of the truck bolster.

A more specific object of the invention is to provide friction means for snubbing or dampening the action of the truck springs of a railway car comprising spring actuated friction blocks mounted in pockets in the truck side frames at the bolster guide portions thereof and engaging opposite sides of the bolster to frictionally oppose upward and downward movement thereof.

Other objects of the invention will more clearly appear from the description and claims hereinafter following.

In the drawing forming a part of this specification, Figure 1 is a side elevational view of a portion of one of the side frame members of a railway car truck and the associated bolster and truck springs, illustrating my improvements in connection therewith, said view being partly in vertical section. Figure 2 is a longitudinal, horizontal, sectional view, corresponding substantially to the line 2—2 of Figure 1. Figures 3 and 4 are detail perspective views of a friction shoe and a wedge block employed in the improved construction illustrated in Figures 1 and 2. Figure 5 is a view, similiar to Figure 1, of the upper right hand portion of the truck side frame member, illustrating another embodiment of the invention.

In said drawing, 10 indicates one of the side frame members of a railway car truck. The side frame member 10 is in the form of a casting and has top and bottom, horizontal members 11 and 12 connected by spaced, vertically disposed sections 13—13. As will be understood by those skilled in this art, the truck includes two side frame members 10—10, a truck bolster 14, and the usual truck springs 15—15 comprising two clusters at opposite sides of the truck supported on the lower members 12—12 of the side frames. The opposite ends of the bolster are guided between the sections 13—13 of the truck side frames and the bolster is supported by the springs 15—15. The truck bolster, in turn, supports the body bolster of the car.

As shown in Figure 1, the sections 13—13 have inwardly offset portions at the upper ends thereof, which provide guides 16—16 with which guide seats 17—17 at opposite sides of the bolster 14 cooperate.

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The vertical sections 13—13 of each side frame casting 10 include vertical side walls 18—18 and inner and outer webs 19 and 20 at right angles to each side wall. The webs 19 and 20 together with similar webs 21—21 on the top and bottom members 11 and 12, form the inner and outer side walls of the side frame casting.

Referring first to the embodiment of the invention illustrated in Figures 1 to 4 inclusive, my improved snubbing means comprises broadly a pair of rocking friction shoes A—A carried by each side frame member, having frictional contact with the bolster at opposite sides thereof; a pair of wedge blocks B—B having wedging engagement with the friction shoes A—A; and two springs C—C cooperating with the wedge blocks B—B.

In carrying out my invention, as illustrated in Figures 1 to 4 inclusive, I provide pockets 22—22 in the side frame member at each side of the bolster guide opening thereof. Each pocket is formed by the inner and outer webs 19 and 20 of the section 13 of the side frame, a vertical rear or back wall 23 spaced from the wall 18, and a bottom wall 24. The offset section 16 of each section 13 forming the bolster guide portion of the section comprises inward extensions of the webs 19 and 20 and transverse top and bottom walls 25—25 connected to said extensions, thus defining a rectangular opening 26 through the section 13 at the bolster guide portion thereof, which opening communicates with the pocket 22. The bottom wall 24 of the pocket is depressed with respect to the bottom wall 25 of the opening 26 and is transversely concave, as shown, to provide a seat in which the lower end of the shoe A is adapted to fulcrum. The pocket 22 is open at the upper end, as indicated at 27, the opening 27 accommodating the spring C.

The shoes A—A are two in number for each side frame member, four such shoes being provided in each truck. The shoes A—A are all of similar design and are arranged in pairs at opposite ends of the truck bolster 14. The shoes A—A at each end of the bolster are located at opposite sides thereof in the pockets 22—22 of the corresponding side frame member.

Each shoe A has a depending fulcrum arm 28, a vertical friction surface 29 on the inner side thereof, and a flat wedge face 30 at its upper end. The shoe A is rockingly or pivotally mounted in the pocket with the friction surface 29 thereof bearing on the vertical side face of the bolster 14.

The wedge blocks B—B are four in number for each railway car truck and cooperate with the four shoes A—A—A—A, two blocks being asso-

ciated with each side frame member. Each block B is of elongated form and enlarged at the lower end. The block B has a flat, vertical, rear face 31 slidingly engaging the inner side of the vertical back wall 23 of the pocket 22. At the lower end, the block B is provided with a flat wedge face 32, which engages with the wedge face 30 of the corresponding shoe A.

The springs C—C—C—C, which are four in number, are arranged in pairs at opposite sides of the truck, two of said springs being associated with each side frame member of the truck and cooperating with the corresponding wedge blocks B—B. The spring C of each wedge block B is interposed between the upper end of the block and the underneath side of the transverse, horizontal wall of the top member 11, which wall is indicated by 33. The upper end of the block B and the wall 33 are provided with spring centering projections 34—34 which engage within the opposite ends of the spring C to hold the same centered. The springs C—C are under initial compression and force the blocks B—B downwardly, thereby wedging the shoes A—A inwardly against the sides of the bolster 14. As will be evident, the frictional resistance provided by the shoes A—A bearing on the bolster effectively snubs the action of the truck springs by opposing vertical movement of the bolster with respect to the truck side frame. In this connection it is pointed out that should the springs C—C fail for any reason, the weight of the wedge blocks B—B will produce a certain amount of wedging action on the shoes A—A to maintain the same in position to guide the bolster and also produce slight frictional resistance to provide snubbing action.

Referring next to the embodiment of the invention illustrated in Figure 5, my improved snubbing means comprises broadly a friction shoe D at each side of the bolster at each end thereof and a leaf spring E cooperating with each shoe.

At each side of the bolster a pocket 35 is provided similar to the pocket 22 of the bolster illustrated in Figures 1, 2, 3, and 4. The pocket 35 includes an inclined top wall 36, which is inclined upwardly and inwardly toward the bolster, as clearly shown in Figure 5. The wall 36 of the pocket forms a wedge face which cooperates with the shoe D. The pocket is also provided with a transverse bottom wall 37, which has an upturned flange 38 at its outer end. The back wall of the pocket is indicated by 39 and is provided with an opening 40 therethrough, thereby presenting a downwardly facing, horizontal shoulder 41 at the top or upper wall of said opening.

The shoe D, which is of the cross sectional shape shown in Figure 5, has a vertically disposed, flat friction surface 42 on the side thereof engaging the corresponding vertical side face of the bolster 14. At the lower inner side, the shoe D is provided with a downwardly inclined, laterally extending arm 43, which is provided with a transverse opening or slot 44, extending therethrough, adapted to accommodate the leaf spring E.

The spring E is in the form of an elongated, flat plate and is engaged through the opening or slot 44 of the arm 43 of the shoe D and is confined between the shoulder 41 and the flange 38 of the pocket 35. The spring E is under tension, being bowed as show in Figure 5, and presses the shoe D against the wedge face 36 of the pocket to wedge the shoe against the side of the bolster. At the inner end of the opening or slot 44 of the arm 43, the lower corner of the shoe D is rounded

off, as indicated at 45, to provide a bearing surface for the leaf spring E.

As will be evident, the friction shoe D is held in tight frictional engagement with the bolster by the leaf spring E, which is under tension, thereby frictionally resisting up and down movement of the bolster to effectively snub the action of the truck springs.

By the arrangement of shoes shown in Figure 5 having the depending arms 43—43, failure of the leaf springs, in case of damage or breakage, is taken care of. Assuming that the spring E is accidentally broken, the shoe D will rock on the arm 43, the latter fulcruming on the lower wall of the pocket 35, a rounded seat 46 being provided at the lower inner corner of the pocket for the end of the arm 43.

I have herein shown and described what I now consider the preferred manner of carrying out my invention, but the same is merely illustrative and I contemplate all changes and modifications that come within the scope of the claims appended hereto.

I claim:

1. In a railway car truck, the combination with truck side frames provided with bolster guides, a truck bolster, and springs supporting said bolster on the truck side frames between said guides; of a pocket in each side frame at opposite sides of the bolster at said bolster guides; a friction shoe in said pocket and fulcrumed at its lower end, said shoe bearing on the side of the bolster; a wedge engaging said shoe and forcing the same against the side of the bolster; and a spring buttressed against the side frame and pressing said wedge into wedging engagement with the shoe.

2. In a railway car truck, the combination with a truck side frame member having spaced, vertical bolster guides, a truck bolster vertically movable between said guides, and truck springs supporting said bolster on the side frame; of a pocket in said side frame at each side of said bolster at said bolster guides; a friction shoe in each pocket, said shoe having a friction surface in engagement with the corresponding side of the bolster, a wedge face at the upper end, and a fulcrum arm at the lower end, said arm being pivotally supported in said pocket; a wedge block in said pocket above said shoe having a wedge face at its lower end engaging the wedge face of the shoe; and a spring under compression buttressed at its upper end against said side frame and bearing at its lower end on the upper end of said wedge block.

3. In a railway car truck, the combination with a truck side frame having spaced, vertical bolster guides, a truck bolster guided for vertical movement between said guides, and truck springs supporting said bolster on the side frame; of pockets in said side frame at opposite sides of the bolster at said bolster guides, each pocket having a vertically disposed inner wall; a fulcrum seat at the lower end of said pocket; a friction shoe in each pocket, said shoe having an outer friction surface thereon bearing on the corresponding side of the bolster; a wedge face at the upper end of the shoe; a fulcrum arm at the lower end of the shoe pivotally supported in said fulcrum seat; a wedge block in said pocket above said shoe interposed between the shoe and said vertical wall of the pocket and slidably engaging said wall, said block having a wedge face at its lower end engaging the wedge face of the shoe; and a spring under compression buttressed against said side

frame and engaging said block to force the same downwardly against the shoe.

4. In a railway car truck, the combination with truck side frame members, a truck bolster, and springs supporting said bolster on the side frame members, said side frame members being provided with bolster guides; of a pocket in one of said side frame members at the bolster guide; a friction shoe in said pocket having a friction surface engaging said bolster, said shoe having a fulcrum portion at its lower end rigid therewith on which the shoe rocks; and means for wedging said shoe against said bolster, comprising a member having a wedge face engaging said

shoe and a spring for pressing said shoe and member against each other.

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