March 15, 1955 W. E. WITHALL 2,704,039

FRICTION MEANS FOR RAILWAY CAR TRUCK BOLSTER

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Fig. 1

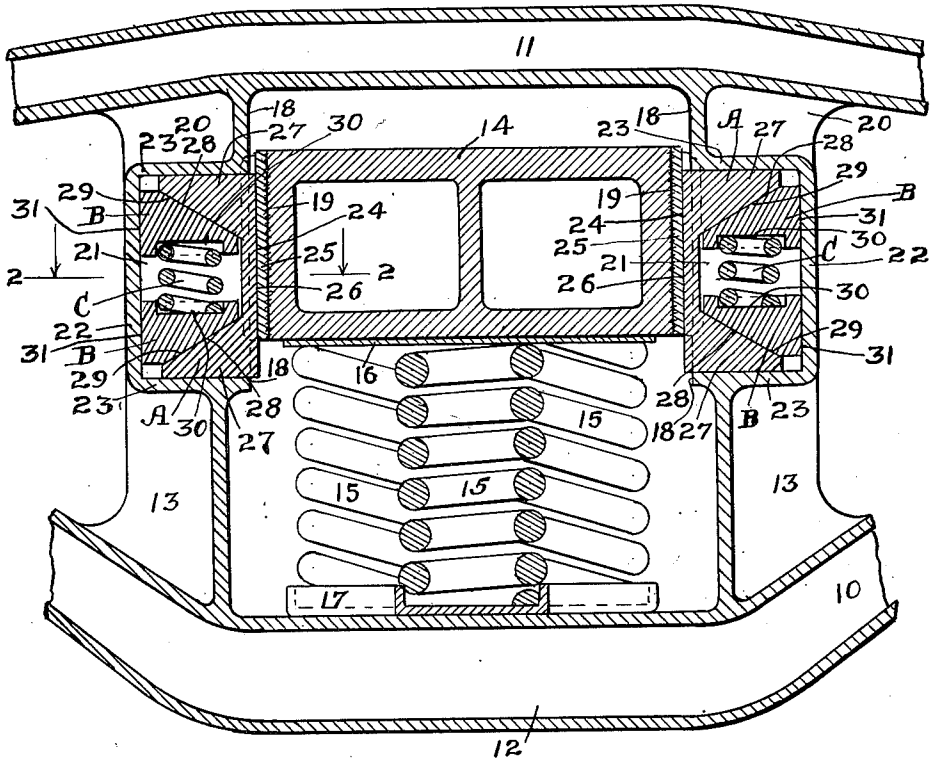


Fig. 2

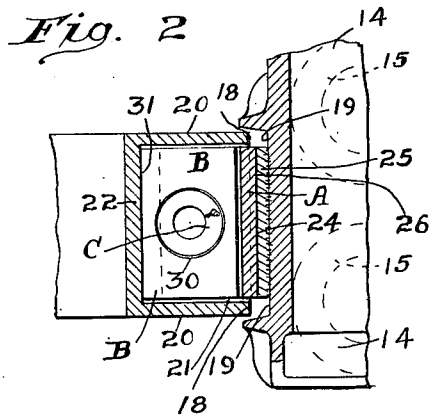
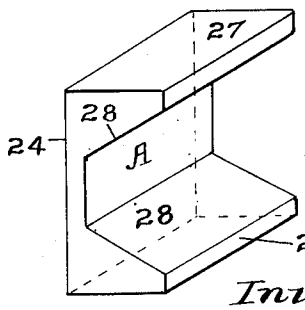


Fig. 3



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FRICTION MEANS FOR RAILWAY CAR TRUCK BOLSTER

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3 Claims. (Cl. 105—197)

This invention relates to improvements in friction means for retarding the up and down movement of railway car truck bolsters to effect snubbing of the truck springs.

One object of the invention is to provide a simple and efficient means for snubbing the action of railway car truck springs by frictionally opposing vertical movement of the truck bolster.

A more specific object of the invention is to provide in a railway car truck a friction block mounted on the truck side frame and frictionally engaging the truck bolster to retard up and down movement of the same in the truck side frame, wherein the block is forced against the bolster by spring actuated wedge members engaging opposed interior wedge faces on the friction block.

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

In the accompanying drawing forming a part of this specification, Figure 1 is a longitudinal, vertical sectional view, partly broken away, of a truck side frame and the cooperating bolster of a railway car truck. Figure 2 is a horizontal sectional view, through portions of the side frame and truck bolster shown in Figure 1, corresponding substantially to the line 2—2 of said figure. Figure 3 is a detailed perspective view of one of the friction blocks of the improved mechanism.

In said drawing, 10 indicates one of the side frame members of a railway car truck. The side frame member 10 is of the usual well-known design, having 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 of the two side frames. The usual top and bottom spring plates 16 and 17 are interposed between each spring cluster and the truck bolster and the bottom member 12 of the side frame, respectively.

As shown in Figure 1, the sections 13—13 have inwardly offset portions at their upper ends, which provide guides 18—18 at opposite sides of the bolster 14, on which the latter is vertically slidable. The vertical side faces at opposite sides of the bolster 14, which cooperate with the guides 18—18, present substantially flat vertical faces 19—19. The vertical sections 13—13 of each side frame casting 10 include inner and outer, vertically disposed side walls 20—20.

As shown in the drawing, my improved snubbing means comprises broadly a pair of friction shoes A—A, carried by each side frame member, a pair of wedge blocks B—B cooperating with each shoe, and a spring C associated with each pair of wedge blocks for spreading the same apart.

In carrying out my invention as illustrated in the drawing, I provide substantially rectangular pockets 21—21 in each side frame member, at opposite sides of the bolster opening thereof. Each pocket 21 is defined by the inner and outer walls 20—20 of the section 13 of the side frame, a vertical rear wall 22, and horizontal top and bottom walls 23—23.

The friction shoes A are two in number for each side frame member, four such shoes being provided in each truck. The shoes A are all of similar design and are arranged in pairs at opposite ends of the truck bolster 14. Each shoe A is in the form of a block having a vertically disposed friction surface 24 on its outer side. As hereinbefore stated, the shoes A are two in number for each side frame, being located at opposite sides of the bolster. Each shoe A is slidingly telescoped in the pocket 21 at the corresponding side of the bolster 14. The friction shoes A—A of each side frame have their friction surfaces 24—24 in sliding engagement with the bolster 14, the latter being preferably provided with wear plates 25—25 on opposite sides thereof, which are welded thereto, and present vertical friction surfaces 26—26 on their outer sides, engaging the surfaces 24—24 of the shoes A—A, respectively. Each shoe A is cut out, or recessed on its inner side, thereby providing inwardly projecting, top and bottom arms 27—27. The arms 27—27 are provided with laterally outwardly diverging, top and bottom wedge faces 28—28 on their inner sides.

The wedge blocks B are four in number for each side frame, a pair of such blocks B—B being disposed in each pocket 21 and having wedging engagement with the corresponding shoe A, to press the same against the bolster. The blocks B—B of each pair are arranged in the corresponding pocket 21, one above the other. Each block B has a wedge face 29, the face 29 of the top block being in wedging engagement with the wedge face 28 of the top arm of the shoe A, and the wedge face 29 of the bottom block being in wedging engagement with the wedge face 28 of the bottom arm of said shoe. The blocks B—B of each pair have vertical rear faces 31—31, which are in sliding engagement with the rear wall 22 of the corresponding pocket.

The springs C are arranged, one in each pocket 21, between the blocks B—B. Each block B is provided with a spring seat 30 into which the corresponding end of the spring extends. The springs C are preferably under initial compression and force the blocks B apart to wedge the shoes A against the sides of the truck bolster.

The actions of the truck springs 15—15 of the railway car are effectively snubbed by the frictional resistance to movement of the bolster 14 provided by the friction shoes A—A, which are pressed tightly against opposite sides of said bolster. As wear occurs in service on the cooperating friction surfaces of the shoes A—A and the wear plates 25—25 of the bolster, the same is compensated for by the spring C acting on the wedge blocks B to wedge the shoes A against the bolster.

I claim:

1. In a railway car truck, the combination with side frames provided with bolster guides, a truck bolster, and springs supporting said bolster on the truck side frames between said guides; of pockets in each side frame at opposite sides of the bolster at said bolster guides each of said pockets having spaced top and bottom walls and a vertical back wall; a one-piece friction shoe in each of said pockets guided between the top and bottom walls thereof and bearing on the corresponding side of the bolster, said shoe having a pair of spaced wedge faces thereon; a wedge block in wedging engagement with each wedge face and in abutment with the back wall of the corresponding pocket; and spring means interposed between and bearing on said blocks for forcing the latter against the wedge faces of said shoes.

2. In a railway car truck, the combination with side frames provided with bolster guides, a truck bolster, and springs supporting said bolster on the truck side frames between said guides; of pockets in each side frame at opposite sides of the bolster at said bolster guides, each of said pockets having spaced top and bottom walls and a vertical back wall; a one-piece friction shoe in each of said pockets guided between the top and bottom walls thereof and bearing on the corresponding side of the bolster, said shoe having top and bottom, interior wedge faces; wedge blocks interposed between said wedge faces, each of said blocks abutting the back wall of the corresponding pocket, said blocks having wedge faces engaging said wedge faces of said shoe; and a vertically disposed spring bearing at its top and bottom ends on said blocks and reacting between said blocks to force the same apart.

3. In a railway car truck, the combination with truck side frame members; of a truck bolster, and springs supporting said bolster on the side frame members, said side frame members being provided with bolster guides;

a laterally opening pocket in one of said side frame members at said bolster guide at one side of the bolster opening of said side frame member, said pocket having vertically spaced interior top and bottom walls, and a vertical back wall; a one-piece hollow friction shoe slidingly guided between said top and bottom walls for lateral displacement in said pocket, said shoe having a friction surface on its outer side engaged with the corresponding side of the bolster, said shoe having interior, opposed, outwardly diverging, top and bottom wedge faces; a top wedge block having a wedge face engaged with said top wedge face of the shoe, and a vertical back face bearing on the back wall of the corresponding pocket; a bottom wedge block having a wedge face engaged with said bottom wedge face of the shoe, and a vertical back face bearing on the back wall of the corresponding pocket; and a vertically disposed spring bearing at its top and bottom ends on said blocks respectively and reacting between said blocks to force the same apart.

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