Sept. 2, 1958 W. L. SCHLEGEL, JR 2,849,964

SNUBBED TRUCK

Filed June 3, 1952 2 Sheets-Sheet 1

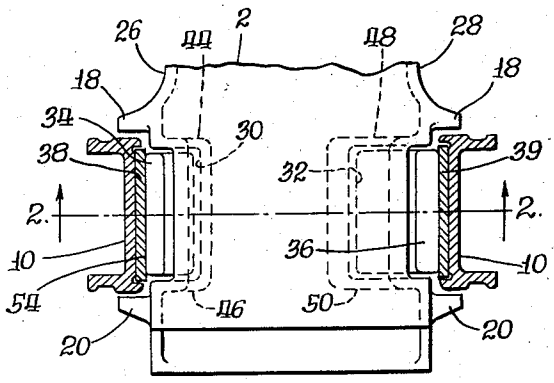

Fig. 1.

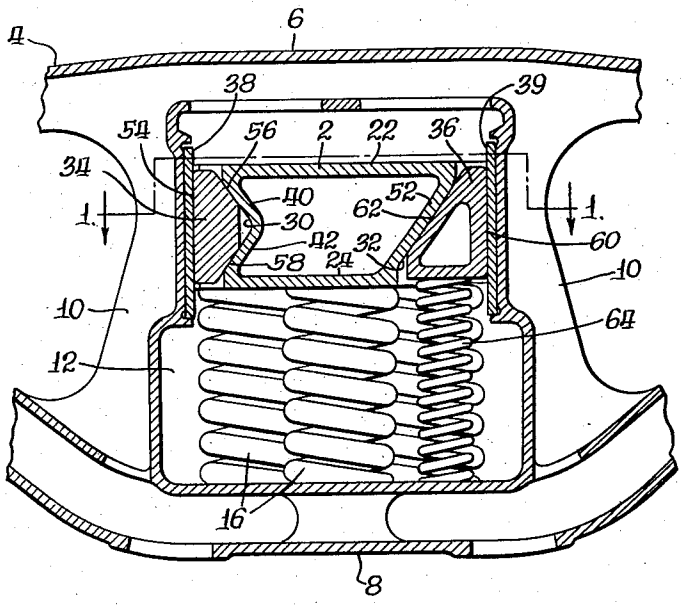

Fig. 2.

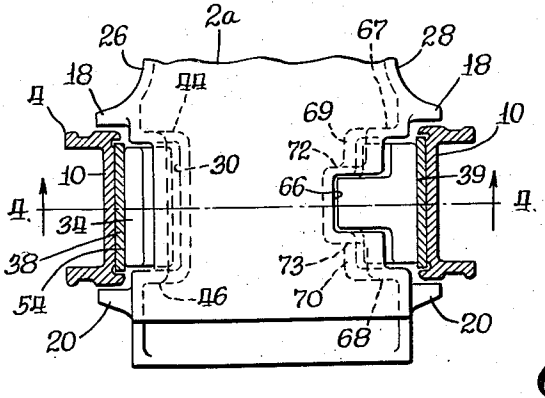

Fig. 3.

INVENTOR.
Walter L. Schlegel, Jr.
BY
O. B. Garner
Atty.

Sept. 2, 1958 W. L. SCHLEGEL, JR 2,849,964

SNUBBED TRUCK

Filed June 3, 1952 2 Sheets-Sheet 2

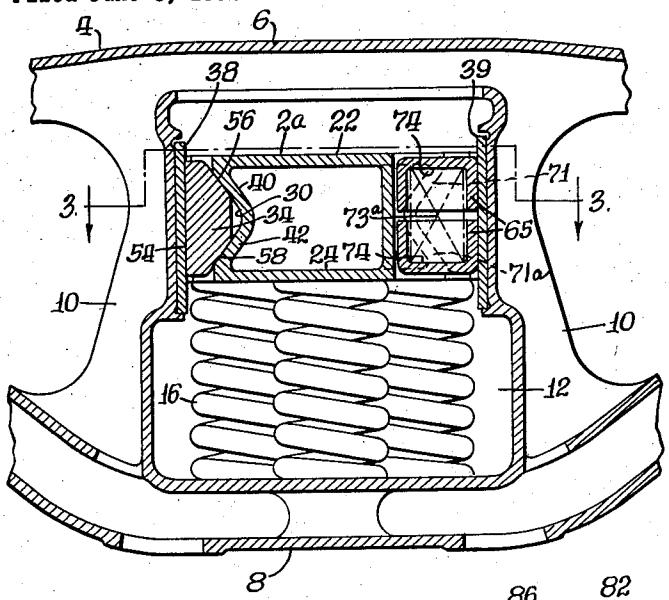

Fig. 4.

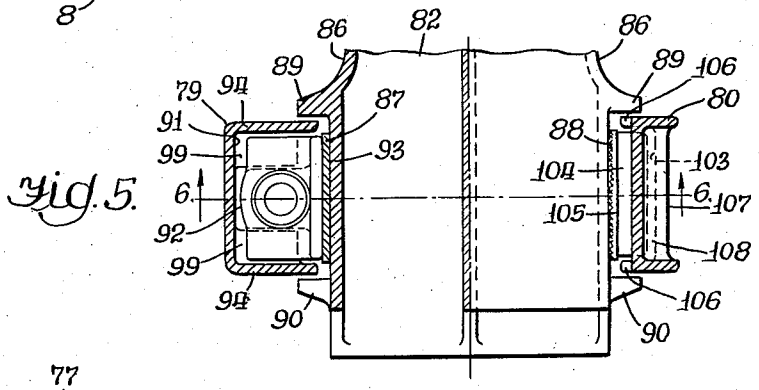

Fig. 5.

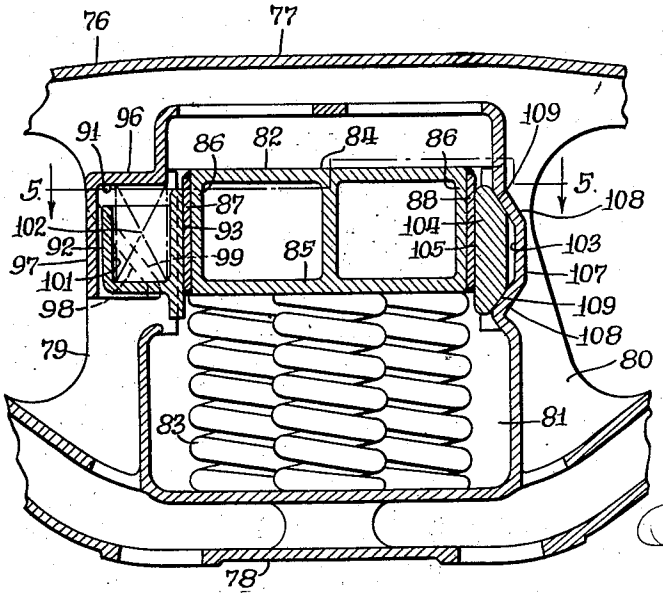

Fig. 6.

INVENTOR.
Walter L. Schlegel, Jr.
BY
O. B. Garner
Attn

United States Patent Office 2,849,964 Patented Sept. 2, 1958

2,849,964

SNUBBED TRUCK

Walter L. Schlegel, Jr., Chicago, Ill., assignor to American Steel Foundries, Chicago, Ill., a corporation of New Jersey

Application June 3, 1952, Serial No. 291,496

8 Claims. (Cl. 105—197)

This invention relates to railway car trucks and more particularly to a truck embodying novel snubbing means for dampening oscillations of a truck bolster upon its supporting springs.

This invention further contemplates the provision of a spring plankless freight car truck construction comprising a bolster resiliently supported upon relatively movable side frames, the bolster and side frames being engaged against relative movement by means of friction shoes disposed between each side frame and the ends of the bolster.

This invention further contemplates the provision of a truck construction in which a pair of friction shoes are disposed at opposite sides of each bolster end to restrain movements of the bolster relative to the side frames, each pair of shoes being urged into frictional engagement between the bolster and side frame by means of resilient means associated with one of the shoes.

This invention further contemplates the provision of a railway car truck construction embodying relatively movable side frame and bolster members, one of said members having pockets to receive friction shoes for frictional engagement against wear plates provided on the other of said members.

This invention embodies other novel features, details of construction and arrangements of parts which are hereinafter set forth in the specification and claims and illustrated in the accompanying drawings, wherein:

Figure 1 is a fragmentary sectional view taken along the line 1—1 of Figure 2 illustrating a truck construction embodying features of the present invention;

Figure 2 is a transverse sectional view taken along the line 2—2 of Figure 1;

Figure 3 is a fragmentary sectional view taken along the line 3—3 of Figure 4 illustrating a modified form of the present invention;

Figure 4 is a transverse sectional view taken along the line 4—4 of Figure 3;

Figure 5 is a fragmentary sectional view taken along the line 5—5 of Figure 6 illustrating another modified form of this invention, and

Figure 6 is a transverse sectional view taken along the line 6—6 of Figure 5.

Referring now to the drawings for a better understanding of the present invention and more particularly to Figures 1 and 2 therein, the truck is shown as comprising a bolster member 2 resiliently supported at its ends upon spaced side frame members 4, only one end of the bolster being shown and described as the other end of the bolster and its associated side frame is identical in construction.

The side frame 4 is shown as comprising a compression member 6, a tension member 8, and spaced columns 10—10 defining therewith a bolster opening 12 for the reception of one end of the bolster 2 which is adapted to be resiliently supported upon the side frame by means of a group of compression springs 16 interposed between the bolster and the tension member. Each side of the bolster is provided with inboard and outboard guide lugs 18—18 and 20—20, respectively, for sliding engagement with the associated column 10, the lugs normally affording an interlock between the bolster and side frame when the springs 16 are disposed on the tension member to support the bolster. Upon removal of the springs 16 it will be noted that the end of the bolster may be lowered and then withdrawn from the widened lower end of the bolster opening 12.

The bolster 2 is of box section comprising top and bottom walls 22 and 24 and spaced side walls 26 and 28 extending therebetween. The side walls 26 and 28 are formed with pockets 30 and 32, respectively, between the lugs 18 and 20 to receive friction shoes 34 and 36, respectively, for engagement against wear plates 38 and 39 secured on the columns 10—10. The pocket 30 is defined by inclined webs 40—42 and spaced inboard and outboard webs 44 and 46, respectively. The webs 40—42 are joined to the top and bottom walls 22 and 24, respectively, and converge inwardly and merge to define a generally V-shape recess. The inboard and outboard edges of the webs 40 and 42 are joined to the inboard and outboard webs 44 and 46 which, in turn, are joined to the side wall 26 and top and bottom walls 22 and 24.

The pocket 32 is defined by spaced inboard and outboard webs 48 and 50 and a diagonal web 52. The webs 48 and 50 are joined to the top, bottom and side walls. The diagonal web 52 is joined to the top wall 22 and slopes downwardly and inwardly to merge with the bottom wall 24. The inboard and outboard edges of the diagonal web merge with the inboard and outboard webs 48 and 50, respectively.

The friction shoe 34 is formed on one side with a flat vertical face 54 to engage the adjacent wear plate 38, and has its other side formed with flat diagonal surfaces 56 and 58 complementary to the outer surfaces of the webs 40 and 42, respectively. The friction shoe 36 is formed with a flat vertical face 60 to engage the wear plate 39, and has its opposite side formed with a diagonal surface 62 complementary to the outer face of the diagonal web 52. A compression spring 64 is seated on the tension member 8 to engage the bottom side of the shoe 36 to urge the latter between the web 52 and adjacent wear plate 39. It will be noted that upward movement of the wedge shape shoe 36 acts to move the bolster laterally to press the friction shoe 34 into tight frictional engagement against the wear plate 38.

Figures 3 and 4 in the drawings illustrate a modified form of this invention in which each end of a bolster 2*a* is formed with a pocket 66 to receive a pair of similar vertically aligned friction shoes 65—65. The pocket is defined by vertical inboard and outboard webs 67 and 68 joined to the top wall 22, bottom wall 24 and side wall 28 of the bolster, and merging with spaced guide webs 69 and 70, respectively, which have their upper and lower ends merging with the top wall 22 and bottom wall 24, respectively. A vertically disposed back web merges with the top and bottom walls 22 and 24 and has its inboard and outboard edges joined to connecting webs 72 and 73, respectively, which are connected to the adjacent edges of the guide webs 69 and 70, respectively.

The guide webs 69 and 70 are formed with coplanar diagonal guide surfaces 71—71 for engagement against complementary surfaces formed on the upper shoe 65, and are also formed with coplanar diagonal guide surfaces 71*a*—71*a* for engagement against complementary surfaces formed on the lower shoe 65. The guide surfaces 71 and 71*a* on each guide web diverge toward the side wall 28 to direct the shoes 65—65 into engagement with the wear plate 39 responsive to expansion of a com-

pression spring 73*a*. The shoes 65—65 are formed with pockets 74—74, to receive the ends of the spring 73*a* which acts to urge the shoes away from each other and against the wear plate 39 to cause the bolster to move laterally and engage the shoe 34 against the wear plate 38. This form of the invention is otherwise similar to the form heretofore shown and described and corresponding reference numbers have been applied to corresponding parts.

Figures 5 and 6 illustrate another modified form of the invention in which a side frame 76 is shown as comprising compression and tension members 77 and 78 and spaced columns 79 and 80, said members and columns defining an opening 81 to receive the end of a bolster 82 which is resiliently supported upon the side frame by a spring group 83 seated on the tension member. The bolster is of box section comprising top and bottom walls 84 and 85 and spaced side walls 86—86 extending therebetween, the side walls having wear plates 87 and 88 secured thereto. Inboard and outboard guide lugs 89—89 and 90—90 are provided on the side walls of the bolster to straddle the columns 79 and 80.

The column 79 is formed with a pocket 91 to receive a friction shoe 92 having a flat surface 93 to engage the wear plate 87. The pocket 91 is defined by spaced side walls 94—94 and top and back walls 96 and 97 extending therebetween. Spaced diagonal guide webs 98—98 are joined to the side walls 94—94 and back wall 97 and formed with coplanar guide surfaces 99—99 for engagement against complementary surfaces formed on opposite sides of the shoe 92. A pocket 101 is formed in the shoe 92 to receive the lower end of a compression spring 102 having its upper end seated against the bottom face of the top wall 96.

The column 80 is formed with a pocket 103 to receive a shoe 104 having a flat front surface 105 engaging the wear plate 88. The pocket 103 is defined by spaced side walls 106—106, a back wall 107, and outwardly diverging walls 108—108 having flat front faces to engage complementary surfaces 109—109 formed on the shoe 104.

In the operation of the snubbing means illustrated in Figures 5 and 6 in the drawings, the spring 102 acts through the shoe 92 to wedge the bolster laterally to engage the wear plate 88 against the shoe 104, and thus serves to maintain both of the shoes in engagement with their respective wear plates during vertical movement of the bolster 82 relative to the side frame 76.

While this invention has been shown in several forms it is obvious to those skilled in the art that it is not so limited but is susceptible of various changes and modifications without departing from the spirit and scope of the claimed invention.

I claim:

1. In a railway car truck, a side frame having spaced columns with substantially vertical friction surfaces partly defining a bolster opening, a bolster spring-supported in said opening, top and bottom wedge surfaces within the bolster diverging toward one of said friction surfaces, said wedge surfaces converging toward the longitudinal axis of the bolster, a friction shoe engaged with said wedge surfaces and said one friction surface, another wedge surface on said bolster facing the other friction surface and arranged at an angle with respect thereto, said other wedge surface and one of said first mentioned wedge surfaces converging with respect to each other toward said axis, another shoe engageable with said other wedge surface and said other friction surface, and spring means carried by the bolster and movable vertically in unison therewith, said spring means being compressed against said other shoe and urging it against said other wedge surface and said other friction surface thereby urging the bolster toward said one friction surface to urge the first mentioned wedge surfaces against the first mentioned shoe whereby the first mentioned shoe is urged against said one friction surface, said spring means being the sole actuating means for both of said shoes and said spring means acting on the first mentioned shoe only through the first mentioned wedge surfaces.

2. In a railway car truck, a side frame having spaced columns partly defining a bolster opening, a bolster structure spring-supported in said opening, friction means carried by said structure in engagement with one column along a substantially vertical surface thereof, a substantially vertical friction surface on the other column, said surfaces facing each other and being substantially parallel, a wedge surface on the bolster structure arranged diagonally with respect to the surface of said other column, a friction shoe having faces engageable, respectively, with the last mentioned surface and with said wedge surface, and spring means carried by the bolster structure for urging said shoe faces against the related surfaces and thereby urging said friction means against the first mentioned surface, said spring means being the sole actuating means for said shoe and for said friction means, and said spring means acting on said friction means only by force exerted by said shoe against said wedge surface.

3. In a railway car truck, a side frame having spaced columns partly defining a bolster opening, a bolster structure in said opening, said bolster structure having top and bottom diagonal surfaces diverging toward one of the columns, a friction shoe having diagonal faces diverging toward said one column and seated against respective surfaces, said shoe having a substantially vertical friction face engageable with a substantially vertical surface of said one column, another surface on the bolster structure arranged diagonally with respect to the other column, another friction shoe engageable with said other surface and having a substantially vertical surface engaging said other column along a substantially vertical surface thereof, and spring means compressed against said other shoe to wedge it against said other surface and said last mentioned column surface thereby urging said top and bottom surfaces toward said one column and against the related faces of the first mentioned shoe whereby the friction surface of the first mentioned shoe is urged against the surface of said one column, said spring means being the sole actuating means for both shoes and said spring means acting on the first mentioned shoe only by force exerted by said other shoe against said other surface.

4. In a railway car truck, a side frame having spaced columns with opposed mutually facing substantially vertical friction surfaces, a bolster spring-supported between said columns, a substantially vertical friction face carried by the bolster for vertical movement in unison therewith, said face being engaged with one of the surfaces, and a friction device carried by the bolster for vertical movement in unison therewith, said device comprising a shoe with a substantially vertical friction face engageable with the other surface, and said device comprising spring means for urging the shoe face against said other surface thereby moving the bolster laterally thereof toward said one column surface to urge said first mentioned face against said one column surface, said spring means being the sole actuating means for said shoe and for said first mentioned face and actuating the latter only by reaction of the device against the bolster.

5. In a railway car truck, a side frame having spaced columns with opposed mutually facing substantially vertical friction surfaces, a bolster spring-supported between said columns, a substantiallly vertical friction face carried by the bolster for vertical movement therewith, said face being engaged with one of the surfaces, and a friction device carried by the bolster for vertical movement therewith, said device comprising a pair of shoes engageable with wedge surfaces of the bolster diverging toward the other friction surface, and said device comprising spring means compressed between said shoes to urge them against respective wedge surfaces and against said other friction surface, said spring means being the sole actuating means for said shoes and for said friction face and

actuating the latter only by force exerted against said wedge faces by respective shoes.

6. In a railway car truck, a side frame having spaced columns with opposed mutually facing friction surfaces, a bolster between said columns, a friction face carried by the bolster for vertical movement therewith, said face being engaged with one of the surfaces, and a friction device carried by the bolster for vertical movement therewith, said device comprising a shoe with a friction face engageable with the other surface, and said device comprising spring means for urging the shoe face against said other surface thereby moving the bolster laterally thereof to urge said first mentioned face against said one surface, said spring means being the sole actuating means for said shoe and said first mentioned face and actuating the latter only by reaction of said device against the bolster.

7. A railway car truck according to claim 6, wherein the first mentioned friction face is readily removable from the bolster when the latter is removed from between said columns.

8. A railway car truck according to claim 7, wherein the removable friction face is held in assembled relationship with the bolster by reaction of the device thereagainst.

References Cited in the file of this patent

UNITED STATES PATENTS

2,159,138	Duryea	May 23, 1939
2,378,415	Light	June 19, 1945
2,574,348	Orr et al.	Nov. 6, 1951
2,597,909	Tack	May 27, 1952
2,650,550	Pierce	Sept. 1, 1953
2,688,938	Kowalik	Sept. 14, 1954