

March 5, 1963

C. E. TACK ET AL

3,079,873

UNIVERSAL SIDE FRAME FOR SNUBBED RAILWAY CAR TRUCKS

Filed Feb. 29, 1960

2 Sheets-Sheet 1

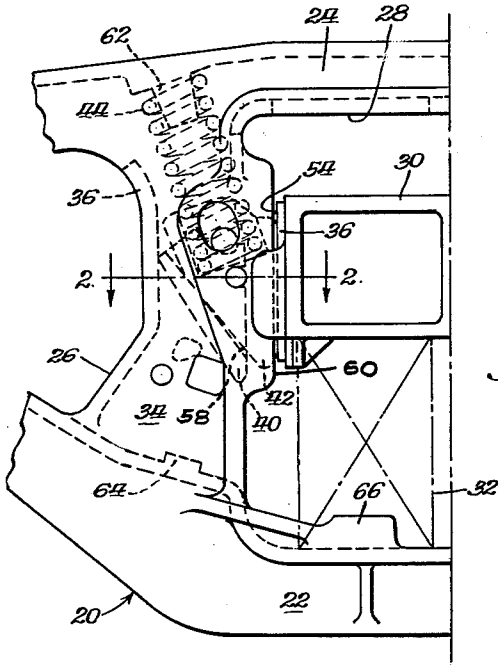


Fig. 1.

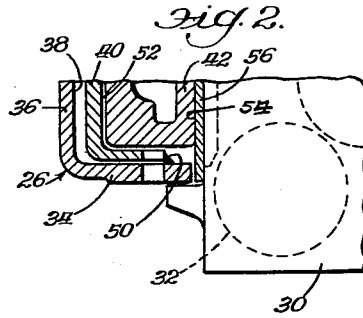


Fig. 2.

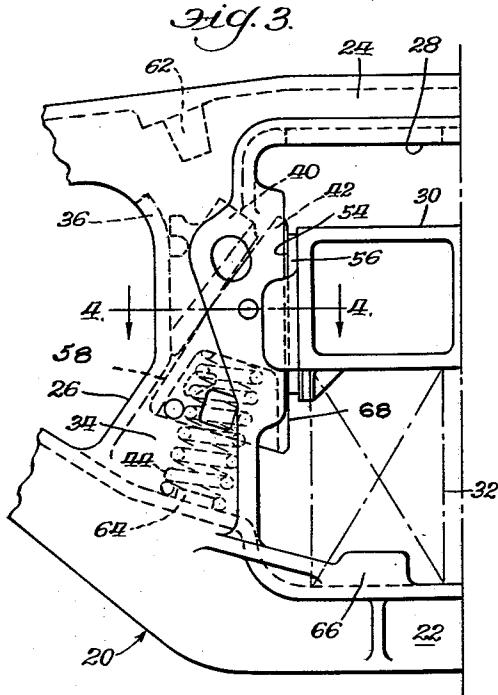


Fig. 3.

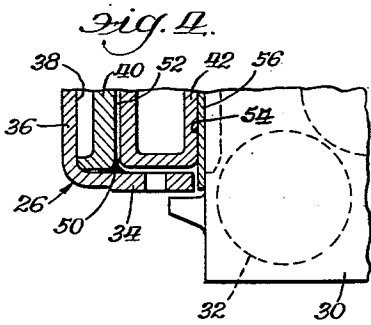


Fig. 4.

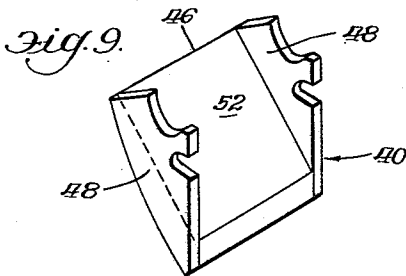


Fig. 9.

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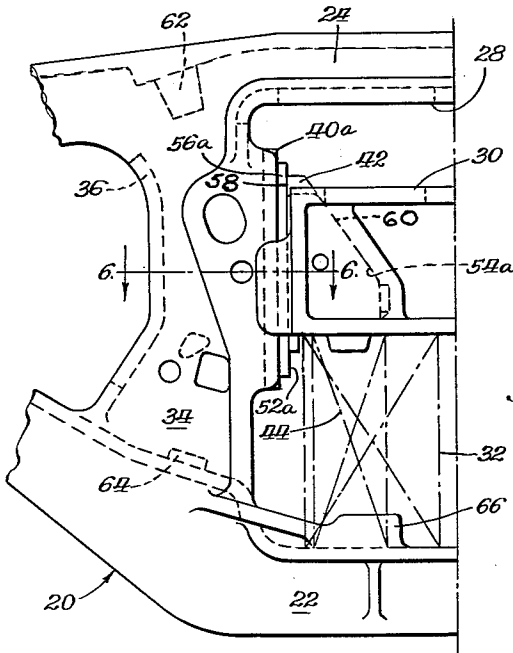


Fig. 5.

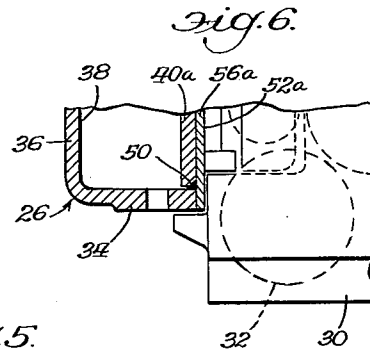


Fig. 6.

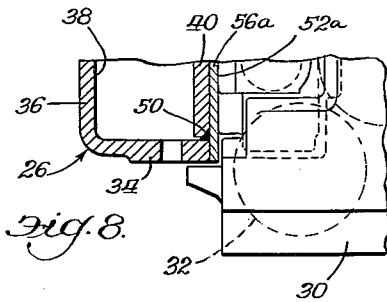


Fig. 8.

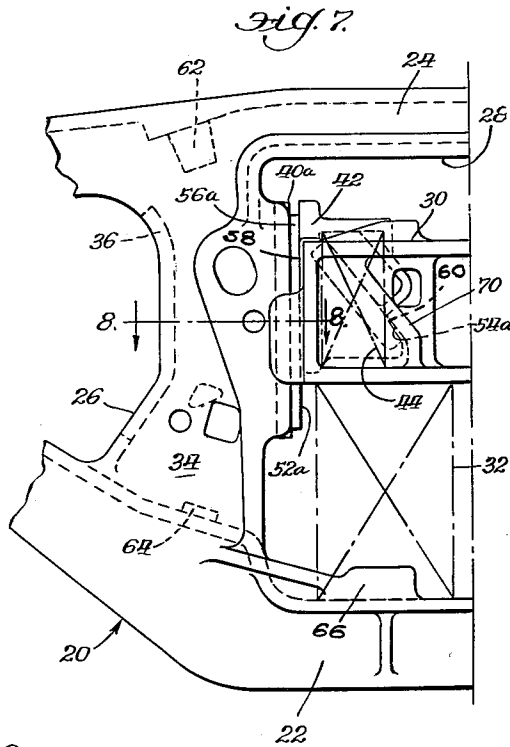


Fig. 7.

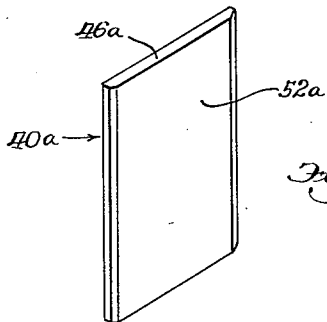


Fig. 10.

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3,079,873

UNIVERSAL SIDE FRAME FOR SNUBBED
RAILWAY CAR TRUCKS

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4 Claims. (Cl. 105-206)

This invention relates to side frames and more particularly to side frames adapted for use in snubbed railway car trucks.

The invention comprehends a universal side frame which is readily adaptable for use in various railway car trucks having different types of snubbing arrangements.

As is known to those familiar with the art of railway freight car trucks, the vast majority of the modern trucks include some type of friction absorbing mechanism or snubbing device for damping relative vertical movement between the bolster and the side frames of the trucks.

Although literally hundreds of snubbing arrangements are known to those familiar with the art, practically all of the snubbed trucks in use today employ a snubbing arrangement which includes a friction spring reacting between a friction shoe and either the bolster or a side frame to urge the shoe into frictional engagement with either the bolster or side frame or with both.

In most of the arrangements currently being employed, the shoe is wedge-shaped and has a pair of angularly related friction surfaces engageable with a pair of cooperating angularly related surfaces of the bolster and side frame, respectively.

The differences between these various snubbing arrangements lie in the structural details of the various snubbing devices. In some arrangements the friction shoe is carried by a side frame, while in others it is carried by the bolster; also, in some arrangements the friction shoe actuating spring reacts between the shoe and the bolster, while in others it reacts between the shoe and the side frame.

Interchange of parts between trucks having different snubbing arrangements is extremely limited, because of the various contours and sizes of their respective parts.

It is a primary object of this invention, however, to provide a universal type side frame which can be adapted for use in various railway car trucks having different snubbing arrangements.

A more specific object of the invention is the provision of a side frame having hollow columns adapted to receive removable friction wall inserts which accommodate use of the side frame in trucks with different snubbing arrangements.

These and other objects of the invention will be apparent from an examination of the following description and drawings, wherein:

FIGURE 1 is a fragmentary side elevational view of a portion of a railway car truck with a side frame embodying features of the invention;

FIGURE 2 is a top plain view of the structure illustrated in FIGURE 1, with portions of the structure shown in horizontal section taken at line 2-2 of FIGURE 1;

FIGURES 3 and 4, 5 and 6, and 7 and 8 are similar to FIGURES 1 and 2, respectively, but illustrate the side frame of FIGURE 1 with various snubbing arrangements;

FIGURE 9 is a perspective view of the column insert illustrated in FIGURES 1 through 4 of the drawings, and

FIGURE 10 is a perspective view of the column insert illustrated in FIGURES 5 through 8 of the drawings.

It will be understood that certain elements have been omitted from certain views where they are better illustrated in other views. Inasmuch as the truck is sym-

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metrical about its transverse and longitudinal vertical center planes, a portion of only one side of the truck is shown in views 1-8.

In referring now to the drawings for a better understanding of the invention it will be seen that a common side frame indicated generally at 20 is shown in connection with the four different snubbed truck arrangements illustrated in FIGURES 1 through 8 of the drawings.

Although the shape of the bolster and/or the friction shoe varies in each of the arrangements, the side frame is universal in character and comprises a pair of tension and compression members 22 and 24, respectively, which are merged at their ends in a conventional manner (not shown) and which are spaced vertically from each other and interconnected intermediate their ends by, a pair of vertically extending integrally formed columns 26 (only one of which is shown).

The columns 26 are spaced longitudinally of the frame from each other to define therebetween an opening 28 within which is received the end of a bolster 30 which may be resiliently supported in the usual manner from the side frame by a plurality of load springs 32 (only one of which is shown).

As best seen in the plan views of FIGURES 2, 4, 6, and 8, each of the side frame columns 26 includes a pair of transversely spaced side walls 34 interconnected at their outer edges by an integral end wall 36 so as to define with each other and with the end wall a space or cavity 38 which is open toward and communicates with the bolster opening 28 of the side frame.

Referring first to FIGURE 1, it will be seen that there is disposed within the opening 38 of the column, a semi-permanent friction wall insert 40 which is illustrated in detail in FIGURE 9. The purpose of the insert 40 is to provide in the side frame column a friction wall for engagement with a spring actuated friction shoe 42 which may be urged into engagement with the side frame and bolster by means of a friction spring 44.

The friction wall insert 40 may be of any shape appropriate or necessary to cooperate with the bolster and friction shoe of the particular snubbed truck arrangement with which the universal side frame is being employed.

The insert illustrated in FIGURE 9 is one which may be used with either of the snubbing arrangements illustrated in FIGURES 1 and 3, and it comprises a transverse friction or wedge wall 46 having extending from the side edges thereof a pair of preferably integral side walls 48 which are parallel to and which may be rigidly connected to the respective side walls 34 of the column in any desired manner, such as by welds 50. The location of the insert in the universal side frame will vary according to the particular snubbed truck arrangement in which the side frame is being employed. In all cases the insert is disposed so that its friction wall 46 extends transversely across the space 38 of the side frame column. In the arrangements illustrated in FIGURES 1 and 3, the insert is disposed with its friction wall inclined so that, in reality, it becomes a wedge wall presenting a friction surface 52 which faces the bolster opening 28 of the side frame and which is angularly related to an adjacent vertical friction surface 54 presented by the bolster or by a wear plate 56 secured to the bolster. Still referring to FIGURE 1, it will be seen that the insert and bolster friction surfaces 52 and 54 are engaged by friction faces 58 and 60, respectively, of the friction shoe 42 which is actuated by the compression spring 44 compressibly interposed between the shoe 42 and the compression member 24 of the side frame. The spring may be held in location by a guide 62 presented by the compression member. It will be noted that the side frame is also provided with additional guides 64 and 66 for use with the friction springs employed in the snub-

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bing arrangements illustrated in FIGURE 3, and FIGURES 5 and 7, respectively, of the drawings.

As best seen from a comparison of FIGURES 1 and 3, the snubbing arrangements are basically the same except that in the arrangement of FIGURE 1, the friction spring is compressed between the friction shoe and the side frame compression member whereas in the arrangement of FIGURE 3, the friction spring is compressed between the friction shoe and the side frame tension member. In each arrangement the insert and friction shoe are both located within the column space 38 and disposed at an angle relative to the vertical friction surface 54 presented by the bolster. It will also be noted that the side walls 34 of the side frame column, as well as the side walls 48 of the insert 40, may be provided with one or more holes (not numbered) to accommodate assembly or disassembly of the particular friction device with which the universal side frame is employed.

Turning now to the arrangements illustrated in FIGURES 5 through 8 of the drawings, it will be seen that in each of these snubbing arrangements the insert 40a consists merely of a flat plate disposed to extend across the space 38 between the side frame column walls 34 and which may be secured thereto by welds 50 in a manner similar to that described in connection with the other views.

In the arrangements illustrated in FIGURES 5 and 7, however, the insert is disposed across the inner edges of the column side walls with its friction surface 52a disposed in a vertical plane for cooperation with an inclined friction surface 54a presented by the bolster. If desired the insert 40a may be provided with a conventional wear plate 56a which presents the vertical friction surface 52a.

As can be seen by a comparison of FIGURES 5 and 7, the insert 40a for the universal side frame can be used with either of these two snubbing arrangements which are similar in some respects but which differ in others. For example, in the snubbing arrangement of FIGURE 5, the friction shoe is actuated by a spring which is compressed against the tension member of the side frame and which is retained in position by the guide 66, whereas in the snubbing arrangement of FIGURE 7, the friction shoe actuating spring is carried within the bolster and is compressed between the shoe and a wall 70.

Thus, it will be understood that the universal side frame conceived by applicants and illustrated in the drawings may be used in car trucks employing widely varying types of snubbing arrangements, and although four different types are illustrated in the drawings, the invention is not limited to these four arrangements alone. Actually, there is no limit to the number of arrangements with which the universal side frame and friction wall inserts may be employed.

We claim:

1. In a truss-type side frame for a railway freight car truck, tension and compression members interconnected by spaced columns to define therewith a bolster opening, each column having transversely spaced side walls interconnected by an outer end wall to define a chamber extending between said members and having an opening communicating with the bolster opening, spring seat

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bosses provided on said tension and compression members and projecting into opposite ends of said chamber and adapted to be selectively engaged by one end of a helical compression spring disposed within said chamber.

2. In a truss-type side frame for a railway freight car truck, tension and compression members interconnected by spaced columns to define therewith a bolster opening, each column having transversely spaced side walls interconnected by an outer end wall to define a chamber extending between said members and having an opening communicating with the bolster opening, spring seat bosses provided on said tension and compression members and projecting into opposite ends of said chamber and adapted to be selectively engaged by one end of a helical compression spring disposed within said chamber, said chamber being adapted to receive therein a metal insert mounted on said side and end walls to provide a diagonal friction surface facing the bolster opening.

3. In a truss-type side frame for a railway freight car truck, tension and compression members interconnected by spaced columns to define therewith a bolster opening, each column having transversely spaced side walls interconnected by an outer end wall to define a chamber extending between said members and having an opening communicating with the bolster opening, spring seat bosses provided on said tension and compression members and projecting into opposite ends of said chamber, said chamber being adapted to receive therein a metal insert mounted on said side and end walls to provide a diagonal friction surface facing the bolster opening, whereby a wedge-shape friction shoe is adapted to be engaged against said friction surface by a helical compression spring engaged between said shoe and one of said spring seat bosses.

4. In a truss-type side frame for a railway freight car truck, tension and compression members interconnected by spaced columns to define therewith a bolster opening, each column having transversely spaced side walls interconnected by an outer end wall to define a chamber extending between said members and having an opening communicating with the bolster opening, spring seat bosses provided on said tension and compression members and projecting into opposite ends of said chamber, said chamber being adapted to receive therein a metal insert having a wedge wall and parallel side walls mounted on said spaced side walls and end wall to provide a diagonal friction surface facing the bolster opening whereby a wedge-shape friction shoe is adapted to be engaged against said friction surface by a helical compression spring engaged between said shoe and one of said spring seat bosses.

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