

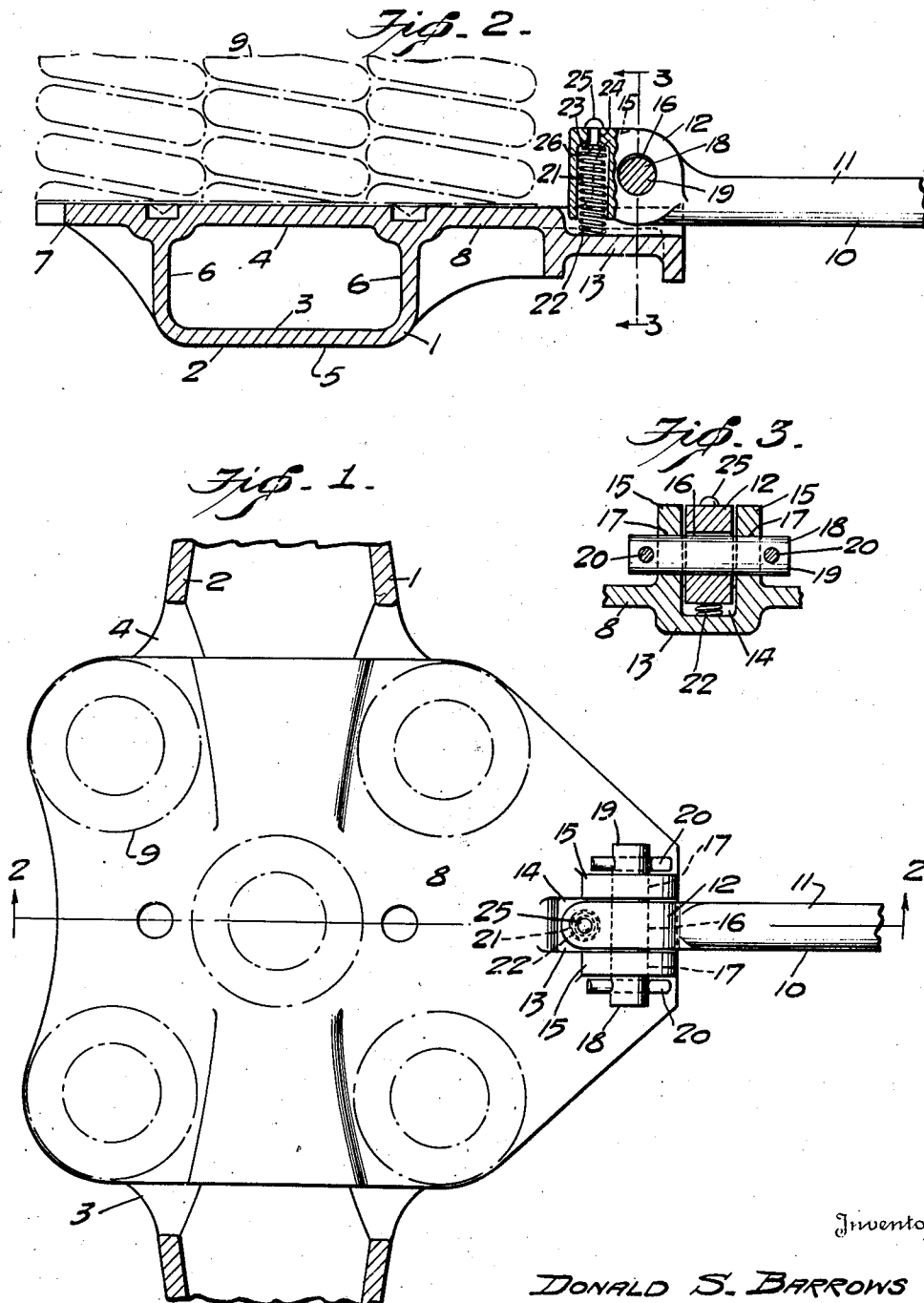
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RAILWAY TRUCK

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RAILWAY TRUCK

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4 Claims. (Cl. 105—208.2)

The invention relates to a railway truck and more particularly to a tie member connecting a pair of spaced side frames.

An object of the invention is the provision, in a railway truck, of a pair of relatively movable side frames connected by means of a tie member which maintains the side frames in a predetermined spaced position or relation.

Another object of the invention is the provision of a resilient means associated with side frames and connecting tie means of a railway truck to cushion the movement of the parts and prevent rattling or chattering of the parts.

Another object of the invention is to provide, in a railway truck, an arrangement and construction whereby an anti-rattling or anti-chattering means is carried by a tie member which connected spaced side frames.

These and other objects of the invention will become apparent from an inspection of the accompanying drawing which illustrates, in various figures, an exemplification of the invention and wherein:

Figure 1 is a horizontal sectional view of a side frame of a railway truck having associated therewith means for connecting it to a similarly constructed side frame (not shown).

Figure 2 is a vertical sectional view taken along the lines 2—2 of Figure 1, looking in the direction of the arrows.

Figure 3 is a vertical sectional view taken along the lines 3—3 of Figure 2, looking in the direction of the arrows.

Referring now in detail to the drawing, wherein like reference characters indicate like parts, the numeral 1 designates a portion of a railway truck comprising a pair of laterally spaced side frames 2, only a portion or lower extremity of one being shown. The side frames employed in the instant structure are preferably of a type described and claimed in my Patent No. 2,132,382, granted October 11, 1938, which covers a railway truck of the spring plankless type and includes two transversely spaced side frames joined intermediate their ends by a load-carrying member or bolster and being capable of movement relative to one another in a direction longitudinally of the truck structure within certain predetermined limits in order to incorporate a desired degree of flexibility in the truck structure. As the present invention has to do particularly with a connecting means for maintaining the side frames in proper spaced relation and means associated therewith to prevent a vibration or rattling thereof, it will not

be necessary to describe the entire side frame and all the component parts of the truck for a complete understanding of the invention.

The side frame comprises a tension member 3 formed by vertically spaced horizontal top and bottom webs 4 and 5, respectively, which are joined adjacent their extremities by horizontally spaced, substantially vertical side walls 6 to form a box-like member. The top or upper web 4 is continued laterally of the truck beyond the planes of the side walls to provide outer and inner extensions 7 and 8, respectively, which, together with the top web, form an adequate area for the support of superimposed bolster supporting springs 9, indicated diagrammatically.

As previously stated, the side frame of the present truck structure is capable of movement both in a vertical and a longitudinal direction relatively to the other side frame of the truck, and since the truck is devoid of a spring plank, means has been provided to maintain the lower extremities of the side frames in a predetermined transversely spaced relation. To the accomplishment of this purpose there is illustrated a tie means or connecting bar or rod 10 having an intermediate portion 11 thereof formed, throughout its extent, of a circular bar of any cross sectional area. The extremities of the connecting rod, only one of which is illustrated, are formed as enlargements or butts 12 to increase the cross sectional area thereof as compared with the cross sectional area of the intermediate portion so as to accommodate the associated elements hereinafter described, without diminishing the strength of the connecting rod. The connecting rod ends 12 are preferably formed integral with the intermediate portion and are of a thickness desirably equal to the diameter of the intermediate portion. It will, of course, be understood that the enlargements or ends may be cast as separate units and secured to the intermediate portion by any of the numerous well known methods.

As the extremities 12 are positioned in the same horizontal plane as the inner extensions of the side frames, the inner extension 8 of each side frame is convoluted, indented or depressed, as at 13, to form an upwardly opening pocket or recess 14 for the accommodation of the associated rod extremity which serves as a reinforcement of the inner extension in the immediate area subjected to stresses resulting from the bottom connection.

Upstanding from each inner extension, adjacent the associated pocket, are longitudinally

spaced substantially vertical hinging lugs or ears 15 formed integrally with the extension to overlap the associated tie bar end 12. Sufficient clearance is provided between the ears and interposed connecting rod extremity to allow an unrestricted horizontal angling movement of the connecting rod with respect to the side frames, thereby eliminating the creation of any abnormal stresses which would tend to either bend the connecting rod or shear the ears or lugs from the inner extension. Each enlargement has an opening 16 directed horizontally and in substantial alignment with correspondingly formed apertures 17 provided in the adjacent ears to accommodate a pintle or securing means 18 which projects through the opening and apertures and about which the connecting rod is free to pivot to form an attachment between the connecting rod and side frame. The pintle may be of any character, such as the headless key 19 having intersecting cotters 20 associated with extremities thereof and positioned outwardly of the ears to prevent the accidental displacement of the key. However, the illustrated key is preferred to a conventional bolt or the like because, by reason of this construction, the pintle may be positioned in the close proximity of the inner extension to provide a much more rigid structure than were a conventional bolt employed since the stem of the bolt would have to be positioned at a greater elevation from the inner extension so as to accommodate the head thereof. The opening 16 in the rod end is made slightly larger than the accommodated pintle so that the connecting rod may be free to move relatively to the associated side frame in an angular and pivotal manner, and since this clearance between the pintle and enlargement must of necessity exist, unless some provision is made the connecting rod will vibrate, when in service, to create an objectionable noise, rattle or chatter. To overcome this undesired condition means has been provided to cushion the movement of the connecting rod, and accordingly each connecting rod enlargement is provided with a cylindrical, downwardly opening, vertically disposed housing or receptacle 21 positioned outwardly of the associated pintle and in the vertical plane of the convolution or indenture 13.

Positioned within and extending outwardly of the housing is a spring or resilient means, represented by a coil or helical spring 22, which abuts or bears against the convolution or indenture to react in a vertical direction and urge the associated end of the connecting rod upwardly. In this manner the slack, clearance or play between the pin and the enlargement is taken up and the movement of the connecting rod is cushioned or resiliently controlled to entirely eliminate any rattle or chatter.

When the connecting rod moves angularly with respect to the side frame there will be a slight sliding movement between the lower extremity or the portion of the spring abutting the convolution and the engaged tension member, and in order to anchor the spring within the housing and positively prevent its accidental displacement the upper extremity of the spring is made frusto-conical, as at 23, by gradually reducing the diameter of the successive coils of the spring approaching the upper extremity thereof. Positioned in alignment with the axis of the spring and communicating with the housing is an aperture 24 which accommodates a rivet 25 having

an inner head 26 of countersunk form occupying the frusto-conical portion of the spring.

As will be understood, various changes and alterations may be made to the illustrated and described structure without departing from within the spirit and scope of the appended claims.

I claim:

1. In a spring plankless truck of the type involving a pair of side frames each having a tension member and being movable relatively to one another longitudinally of the truck, the combination of an upwardly facing convolution formed in each of said tension members, spaced lugs extending upwardly from said tension members adjacent each convolution, a tie bar having enlarged end portions positioned between said spaced lugs, horizontal pivot means extending through said lugs and end portions, and spring means associated with said end portions and reacting against said convolutions for preventing rattling of said tie rod.

2. In a spring plankless truck of the type involving a pair of side frames each having a tension member and being movable relatively to one another longitudinally of the truck, the combination of a recess defining convolution formed in each of said tension members, horizontally spaced lugs extending vertically from said tension members adjacent each convolution, a tie bar having enlarged end portions positioned between said spaced lugs and in said recesses, horizontal pivot means extending through said lugs and end portions, and spring means positioned in said end portions and reacting against said convolutions for preventing rattling of said tie rod.

3. In a spring plankless truck of the type involving a pair of side frames each having a tension member and being movable relatively to one another longitudinally of the truck, the combination of an indenture formed in each of said tension members, spaced lugs on said tension members adjacent each indenture, a tie bar having enlarged end portions positioned between said spaced lugs and in said indentures, headless pintles extending through said lugs and end portions, means removably associated with said headless pintles for preventing accidental displacement thereof, sufficient clearance being provided between said end portions and said pintle and lugs to allow a horizontal angling of said tie bar with respect to said side frames, and coil spring means associated with said tie bar to urge it away from said indentures and prevent rattling thereof.

4. In a spring plankless truck of the type involving a pair of side frames movable relatively to one another longitudinally of the truck, the combination of a tie rod extending between said side frames and having enlarged end portions, indentures in each side frame, spaced vertical lugs on each of said side frames adjacent said indentures and overlapping an associated end portion, horizontal pivot means extending through said end portions and lugs, said pivot means having sufficient clearance thereabout to permit a horizontal angling movement of said tie rod with respect to said side frames, housings formed in said end portions extending into said indentures, and resilient means positioned within said housings and reacting against said side frames for urging said tie rod vertically and preventing rattling of said tie rod.

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