April 14, 1942. R. LEPPLA 2,279,793

BOLSTER CENTERING DEVICE

Filed March 10, 1941

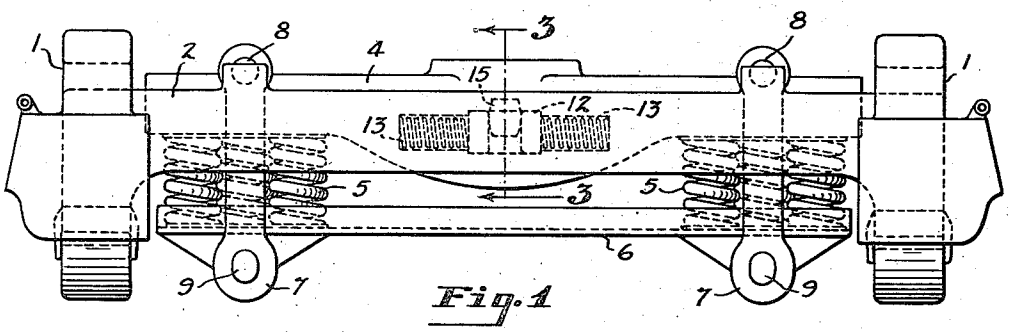


Fig. 1

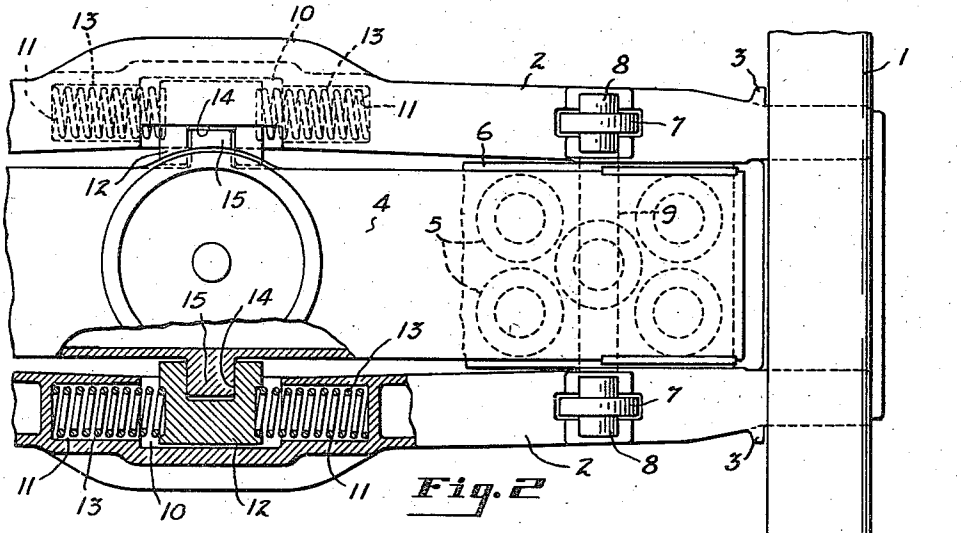


Fig. 2

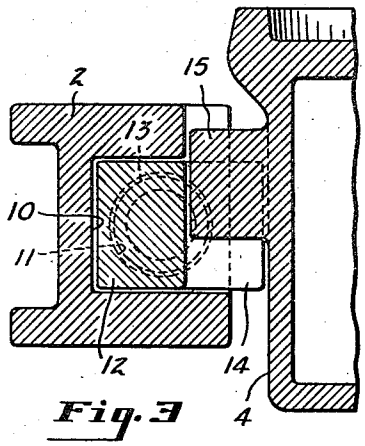


Fig. 3

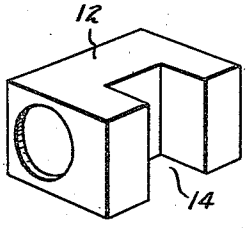


Fig. 4

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BOLSTER CENTERING DEVICE

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5 Claims. (Cl. 105—193)

This invention relates to car trucks, and more particularly to a device for centering the bolster and for cushioning endwise movements of the bolster.

The invention has for its object to provide a simple and effective device for yieldably holding the truck bolster in the central position and for cushioning and limiting the endwise movements of the bolster.

A further object is to provide a centering device which is not affected by vertical rocking movements of the bolster.

A further object of the invention is to provide a centering device which is of simple and rugged construction, which comprises a minimum amount of space and which adds but little to the cost of manufacture of the truck.

With the above and other objects in view, the invention may be said to comprise the bolster centering device as illustrated in the accompanying drawing hereinafter described and particularly set forth in the appended claims, together with such variations and modifications thereof as will be apparent to those skilled in the art to which the invention pertains.

Reference should be had to the accompanying drawing forming a part of this specification, in which:

Figure 1 is a side elevation of the transom and bolster of a railway car truck equipped with the centering device of the present invention;

Fig. 2 is a fragmentary top plan view of the transom and bolster, a portion of the transom being broken away to show one of the two identical centering and cushioning devices in section;

Fig. 3 is a section taken on the line indicated at 3—3 in Fig. 1; and

Fig. 4 is a perspective view of the guide block which is interposed between the bolster and transom.

The accompanying drawing shows the centering device of the present invention interposed between the transom and bolster of a railway car truck. The truck is provided with side frames 1 which are connected by a transom, which comprises two spaced crossbeams 2 rigidly connected and mounted at their ends in the central openings of the side frames 1 and which are held against endwise movement with respect to the side frames by suitable means such as lugs 3 on the transom engaging the side frames. A bolster 4 is mounted for vertical movement between the crossbeams 2 and is supported at its ends upon suitable springs 5 which are interposed between the bolster and a supporting spring plank 6 which is suspended from the crossbeams by means of links 7, which are connected by pivots 8 at their upper ends to the crossbeams 2 and by pivots 9 at their lower ends to the spring plank 6. The bolster 4 is yieldingly supported on the springs 5 and has vertical movements between the crossbeams 2 due to the cushioning action of the springs 5 and may also have vertical rocking movements due to greater compression of the springs at one end or the other of the bolster. The bolster may also move endwise by reason of the pivotal support of the spring plank on the suspension links 7.

The device of the present invention is designed to center the bolster with respect to the side frames, and to cushion and limit the endwise movements of the bolster. Substantially midway between its ends each of the crossbeams 2 is provided with a longitudinal recess 10 opening to the side facing the bolster and at each end of the recess 10 there is a spring pocket 11 which opens into the end of the recess, the spring pockets extending longitudinally of the crossbeams. A guide block 12 is slidably mounted in the recess 10 of each crossbeam and is normally held in a position substantially midway between the ends of the recess by means of coil springs 13 seated in the pockets 11 and engaging opposite side faces of the block 12.

The guide block 12 carried by each crossbeam is constrained to horizontal movement longitudinally of the crossbeam in the recess 10 of the crossbeam which provides a horizontal guide for the block and each of the guide blocks 12 is so connected to the bolster that it is constrained to vertical movement with respect to the bolster. As herein shown, each guide block 12 has a vertical groove 14 on the side thereof which faces the bolster and the bolster is provided on each side with an integral lug 15 which slides vertically in the groove 14 of the adjacent guide block 12. The grooves 14 and the lugs 15 provide vertical tongue and groove guides for the blocks 12 which permit the bolster to move vertically with respect to the guide blocks 12 and constrain the blocks 12 to movements horizontally with the bolster whenever an endwise movement is imparted to the bolster. The horizontal movement of the guide blocks 12 in either direction is resisted by one of the coil springs 13 and the extent of endwise movement of the bolster is limited by engagement of the guide blocks 12 with the ends of the recesses 10, the springs 13 being movable into the pockets 11 to permit engagement of the blocks with the ends of the recesses 10 when a severe

thrust in the direction of its length is exerted upon the bolster.

The guide blocks 12 and the lugs 15 are preferably located substantially midway between the ends of the bolster, at which point the bolster has a minimum range of vertical movement and at which point there is a minimum lateral movement of the lugs 15 due to rocking movements of the bolster and substantial pressure is exerted upon the cushioning springs 13 only when the bolster is moved bodily in an endwise direction. The guide blocks 12 may have sufficient clearance in the recesses 10 to permit the blocks to have slight rocking movements in the recesses when the bolster is tilted and clearance may also be provided between the side faces of the lugs 15 and the side walls of the grooves 14 to permit slight rocking movements of the lugs in the grooves 14. Also, by providing a centering and cushioning device midway between the ends of the bolster, the mounting of the centering and cushioning elements is simplified because it is located at a distance from the bolster supporting and cushioning elements.

It is to be understood that variations and modifications of the specific devices herein shown and described for purposes of illustration may be made without departing from the spirit of the invention.

What I claim is:

1. In a car truck having side frames and parallel cross members between the side frames, one of said cross members being held against lateral movements with respect to the side frames and another of said members being a car body supporting member mounted for vertical and endwise movements with respect to the other member, a centering device for the movable supporting member comprising a guide block mounted on one of said members substantially midway between the ends thereof for horizontal movements lengthwise of said members, said guide block having a vertical guide groove, a lug in the other of said members engaging in said groove, compression coil springs engaging opposite sides of said guide block, and shoulders on the member which carries the guide block for limiting the extent of movement of the block.

2. In a car truck having side frames and parallel cross members between the side frames, one of said cross members being held against lateral movements with respect to the side frames and another of said members being a car body supporting member mounted for vertical and endwise movements with respect to the other member, a centering device for the movable supporting member comprising a guide block mounted on one of said members substantially midway between the ends thereof for horizontal movements lengthwise of said members, said guide block having a vertical guide groove, spring pockets formed in the member upon which said guide block is mounted and disposed upon opposite sides of said guide members, said pockets having their open ends facing said guide block, stop shoulders for limiting the horizontal movements of the blocks, compression coil springs mounted in said pockets and engaging opposite sides of said block, and a lug on the vertically movable member engaging in said vertical groove.

3. In a car truck, side frames, parallel crossbeams extending across the space between the side frames, a spring supported bolster mounted for vertical and endwise movements between said crossbeams, a pair of guide blocks mounted in the opposed sides of said crossbeams for sliding movement longitudinally of said beams, said guide blocks having vertical grooves in their opposed faces, springs engaging said guide blocks to resist sliding movements thereof, and lugs on opposite sides of said bolster engaging in said grooves.

4. In a car truck, side frames, parallel crossbeams extending across the space between the side frames, said crossbeams having longitudinally extending recesses in their opposed faces and spring pockets in alinement with said recesses and opening into the ends thereof, a spring supported bolster mounted for vertical and endwise movements between said crossbeams, a guide block slidably mounted in each of said recesses, said blocks having vertical guide grooves on their opposed faces, lugs carried by the bolster and engaging in said grooves, and compression coil springs seated in said pockets and engaging opposite sides of said guide block.

5. In a car truck, side frames, parallel crossbeams extending across the space between the side frames, said crossbeams having longitudinally extending recesses in their opposed side faces located substantially midway between the ends thereof and spring pockets alined with the recesses and opening into the ends thereof, a spring supported bolster mounted for vertical and endwise movements between said crossbeams, a guide block slidably mounted in each of said recesses and projecting into the space between the crossbeam and bolster, a vertical tongue and groove connection between said guide block and bolster, and compression coil springs seated in said pockets and engaging opposite sides of said guide block.

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