

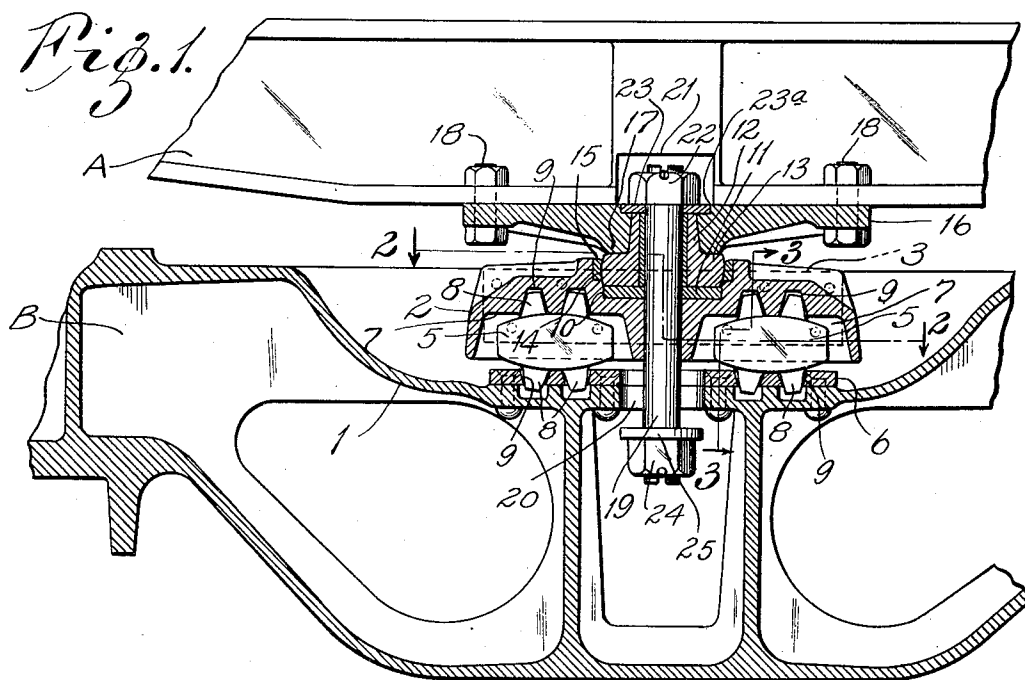
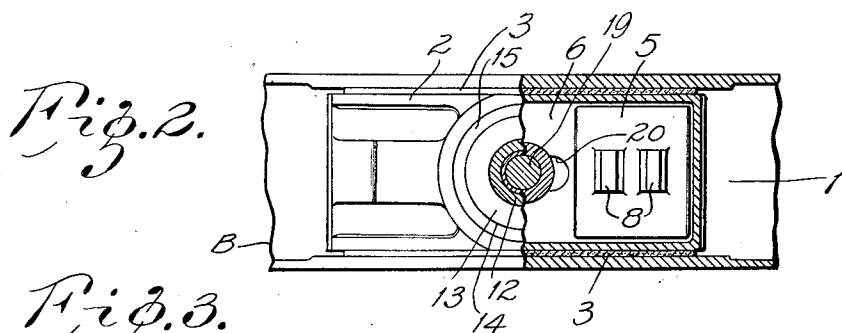
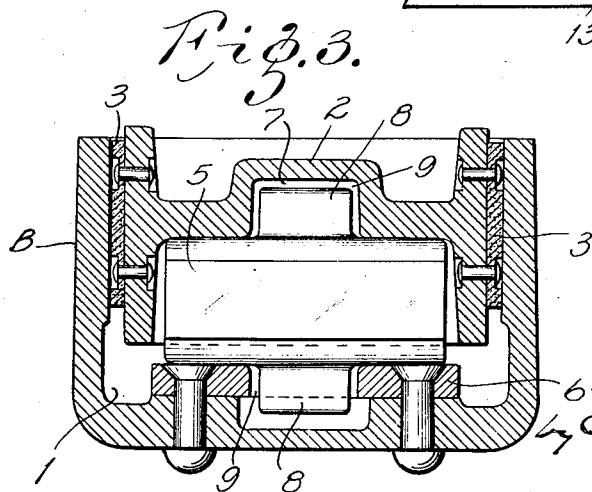
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H. W. ALDEN

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CENTER BEARING CONSTRUCTION FOR RAILWAY CARS

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UNITED STATES PATENT OFFICE

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CENTER-BEARING CONSTRUCTION FOR RAILWAY CARS

Application filed October 17, 1928. Serial No. 313,094.

This invention relates principally to center bearing constructions for railway cars.

The principal object of the present invention is an improved center bearing construction that will permit sidewise movement of the car body relative to the car truck as well as free swiveling of said truck beneath said car body. Another object is to utilize the weight of the car body to cushion and limit the sidewise movement of the car body relative to the truck and to return the car body to its normal position after such movement. Other objects are simplicity of construction, compactness and economy of design, fewness of parts, ease of assembly, and to deaden the noise, jar and vibration. The invention consists principally in the center bearing construction, and in the parts and in the arrangements and combinations of parts hereinafter described and claimed.

In the accompanying drawings, which form part of this specification and wherein like symbols refer to like parts wherever they occur,

Fig. 1 is a vertical central longitudinal section through the adjacent middle portions of a body bolster and a truck bolster provided with a center bearing construction embodying my invention;

Fig. 2 is a horizontal section on the line 2—2 of Fig. 1; and

Fig. 3 is a vertical transverse section through the truck bolster on the line 3—3 of Fig. 1.

Referring to the accompanying drawings, my center bearing construction is shown in connection with a suitable body bolster A supported on a truck bolster B, only the middle portions of the two bolsters being shown. The middle portion of the truck bolster B is provided at its top with a recess or pocket in the form of a longitudinal channel-shaped slideway 1 which extends far enough on opposite sides of the transverse center line of said truck bolster to accommodate an elongated center bearing support 2 arranged for longitudinal sliding movement in said slideway 1. Each vertical side face of the center bearing support 2 has a thickness of brake lining material or other suitable material 3

riveted flatwise thereto which bears against the adjacent side wall of the recess and serves as a cushion to deaden the noise when the support moves longitudinally of the body bolster and rubs against the side walls of channel 1 and when it moves transversely thereof due to the slight clearness between said support and the side walls of said channel. The center bearing support 2 is supported in the longitudinal channel 1 in the top of the truck bolster B for limited sliding movement lengthwise thereof by means of two rocker members 5 that are spaced apart longitudinally of said truck bolster on opposite sides of the transverse center line thereof and rest on a hardened steel plate 6 riveted flatwise to the bottom of the channel 1. The rocker members are loosely confined within downwardly opening recesses or pockets 7 provided therefor in the underside of the center bearing support 2, and the top and bottom surfaces are convexly curved lengthwise of the truck bolster but have no curvature crosswise and are provided with teeth 8 which extend crosswise of said rocker members and are adapted to engage pockets or recesses 9 provided therefor in the downwardly opening pockets 7 of the center bearing support 2 and the rocker supporting plate 6, respectively. As shown in the drawings, the teeth 8 of the rocker members 5 are disposed radially with respect to the center of curvature of the convex surface from which they project and are spaced apart equal distances on each side of the transverse center lines of said rocker members. It is noted that the teeth of the rocker members terminate short of the sides thereof and that clearance is provided between the ends of said teeth and the pockets therefor, whereby the center bearing support 2 rests directly upon the convex top surface of the rockers and the convex bottom surface of said rockers rests directly on the supporting plate 6, thereby relieving said teeth of the weight of the car body.

Firmly seated on the bottom of a circular recess 10 provided therefor in the top of the center bearing support 2 at the center thereof is a hardened steel washer 11; and seated on said washer is a cylindrical bearing sleeve 12

which is provided with an annular base flange 13 whose periphery is provided with a spherical surface 14 adapted to engage the inner periphery of a hardened steel ring 15 which is press-fitted in an annular recess provided therefor in the circular recess 10. The portion of the bearing sleeve 12 located above its base flange 13 tapers slightly and has a press-fit in a tapered hole provided therefor in the center of a horizontally disposed center plate 16 having a central circular depending boss 17 supported on the base flange of the bearing sleeve. The center plate 16 is rigidly secured to the bottom surface of the body bolster A by means of bolts 18 which extend vertically through the aligned openings provided therefor in the side flanges of the body bolster and the four corners of said center plate.

The body center plate 16 is connected to the truck bolster B by means of a vertical center pin or king bolt 19 which passes downwardly through registering central openings provided therefor in the center plate 16, bearing sleeve 12, washer 11, bearing supporting member 2 and truck bolster B. The pin 19 has a snug fit in the bearing supporting member 2 and washer 11, and a loose fit in the bearing sleeve 12; and the pin receiving opening in the truck bolster is made in the form of an elongated slot 20 which extends through the wear plate 6 and the bottom of the longitudinal channel and is disposed longitudinally thereof so as to permit limited horizontal movement of the pin longitudinally of the truck bolster. The upper end of the center pin 19 extends into a recess 21 provided therefor in the bottom of the body bolster A and is threaded to receive a nut 22. The center pin is removably secured to the body center plate 16 by means of a locking plate 23 which is slidably mounted in a cross slideway 23^a provided therefor in the upper surface of said center plate and has its inner end portion bifurcated to closely embrace the center pin immediately below the nut 22 on the upper end thereof. The lower end of the center pin extends below the bottom of the longitudinal channel 1 in the top of the truck bolster B and is threaded to receive a nut 24 provided with a washer or flange 25 which serves to limit the upward movement of the center pin when the car body swings sidewise and is forced upwardly by the rockers 5. The washer 25 also serves to prevent the bearing supporting member 2 from being lifted far enough off of the rockers to cause the teeth thereof to become disengaged from the recess and said member.

The hereinbefore described center bearing construction supports the car body on the truck and allows it to tilt when passing curves; it also allows the truck to turn freely under the car; and it also allows the car body a limited amount of sidewise movement to

mitigate lateral blows or shocks and to prevent the momentum of the car body from acting with its full force on the truck frame and wheel flanges. It is noted as an important advantage of my invention that when the car body shifts sidewise, it is also lifted upwardly on the rockers, whereby the weight of the car body on the tilted rockers tends to offer a gradually increasing resistance to the sidewise movement of the car body and also tends to return the car body and its supporting rockers to their normal positions at all times.

Obviously the hereinbefore construction admits of considerable modification and I do not wish to be limited to the precise details of construction shown and described.

What I claim is:

1. A center bearing construction for railway cars comprising a truck bolster having a longitudinal slideway in the top thereof, a supporting member mounted in said slideway for limited vertical and longitudinal sliding movement therein, a body bolster pivotally supported on said supporting member, and rocker members interposed between the bottom of said slideway and said supporting member, said supporting member being provided on its undersurface with downwardly opening pockets adapted to loosely house said rocker members.

2. A center bearing construction for railway cars comprising a truck bolster, a supporting member secured to said truck bolster for limited vertical and longitudinal sliding movement relative thereto, a body bolster rotatably supported on said supporting member, and rocker members mounted on said truck bolster and supporting said supporting member, said rocker members having single top and bottom bearing surfaces that are convexly curved lengthwise of said truck bolster and extend straight from side to side at every point, whereby said rocker members are adapted for rocking movement only in directions longitudinally of said truck bolster.

3. A center bearing construction for railway cars comprising a truck bolster, a supporting member secured to said truck bolster for limited vertical and longitudinal sliding movement relative thereto, a body bolster rotatably supported on said supporting member, and rocker members mounted on said truck bolster and supporting said supporting member, said rocker members being shaped and arranged for rocking movement only in directions longitudinally of said truck bolster, said rockers having teeth cooperating with recesses provided therefor in said supporting member and said truck bolster, the teeth that cooperate with the recesses in said truck bolster terminating short of the bottoms of said recesses, thereby relieving said teeth of the weight of the car body.

4. A center bearing construction for rail-

way cars comprising a truck bolster, a supporting member secured to said truck bolster for limited vertical and longitudinal sliding movement relative thereto, a body bolster rotatably supported on said supporting member, and rocker members mounted on said truck bolster and supporting said supporting member, said rocker members having top and bottom surfaces that are convexly curved lengthwise of said truck bolster and extend straight from side to side at every point, whereby said rocker members are adapted for rocking movement only in directions longitudinally of said truck bolster.

rocker members being shaped and arranged for rocking movement only in directions longitudinally of said slideway, and a center bolt for securing the body bolster plate to said truck bolster, said center bolt extending through registering openings provided therefor in the body bolster plate, bearing sleeve, supporting member and truck bolster, the opening in the truck bolster being shaped to permit movement of the center bolt with said supporting member, the lower end of said bolt being provided with members adapted to abut against the truck bolster and limit the upward movement of said bolt and the parts secured thereby.

Signed at Detroit, Michigan, this 12th day of October, 1928.

HERBERT W. ALDEN.

5. A center bearing construction for railway cars comprising a truck bolster, a supporting member secured to said truck bolster for limited vertical and longitudinal sliding movement relative thereto, a body bolster rotatably supported on said supporting member, rocker members mounted on said truck bolster and supporting said supporting member, said rocker members having top and bottom surfaces that are convexly curved lengthwise of said truck bolster and extend straight from side to side at every point, whereby said rocker members are adapted for rocking movement only in directions longitudinally of said truck bolster, and means on said rocker members cooperating with means on said supporting member and said truck bolster for retaining said rocker members in proper position relative to said supporting member and said truck bolster.

6. A center bearing construction for railway cars comprising a truck bolster, a supporting member secured to said truck bolster for limited sliding movement longitudinally thereof, a body bolster rotatably supported on said supporting member, and rocker members mounted on said truck bolster and supporting said supporting member, said rocker members being shaped and arranged for rocking movement only in directions longitudinally of said truck bolster and having portions movably interlocked with said bolster and said supporting member, respectively, the interlocking portions of said rockers and said bolster being shaped and arranged so as to be relieved of the weight of the car body.

7. A center bearing construction for railway cars comprising a truck bolster having a longitudinal slideway in the top thereof, a supporting member mounted in said slideway for limited vertical and longitudinal sliding movement therein, wear strips secured to the longitudinal side faces of said supporting member, a bearing sleeve supported on said supporting member for rotary and tilting movement thereon, a body bolster, a center plate mounted on said bearing sleeve and secured to said body bolster, rocker members mounted in the slideway of said truck bolster and supporting said supporting member, said

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