No. 798,350. PATENTED AUG. 29, 1905.

J. J. LAKE & A. C. DEVERELL.

ANTIFRICTION BEARING FOR RAILWAY CARS.

APPLICATION FILED OCT. 8, 1904.

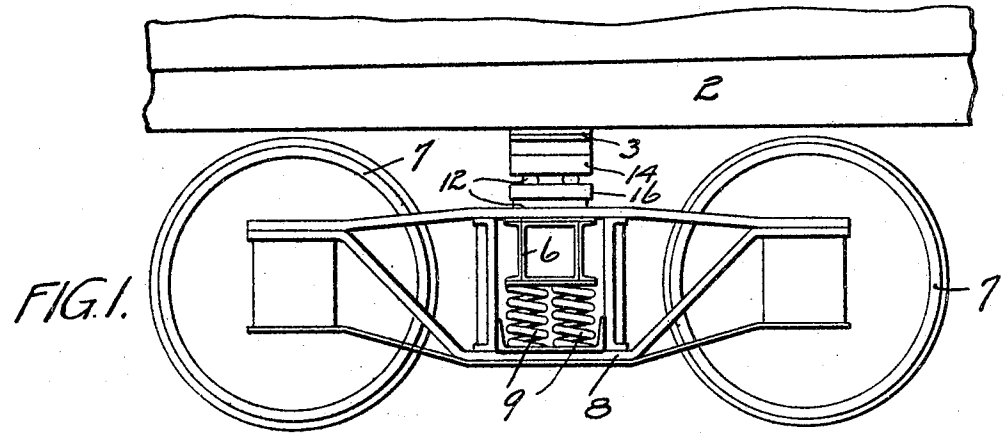


FIG. 1.

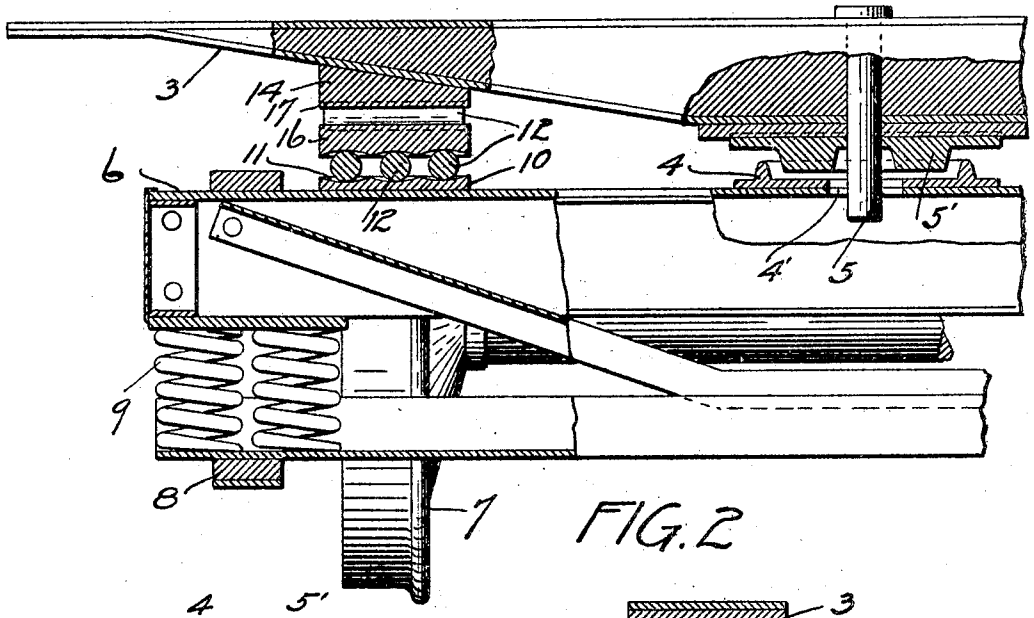


FIG. 2

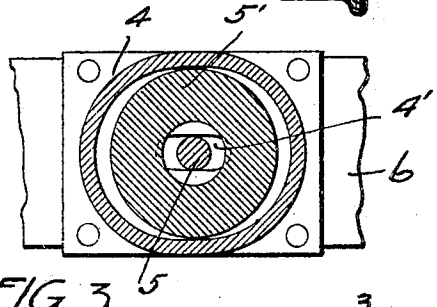


FIG. 3

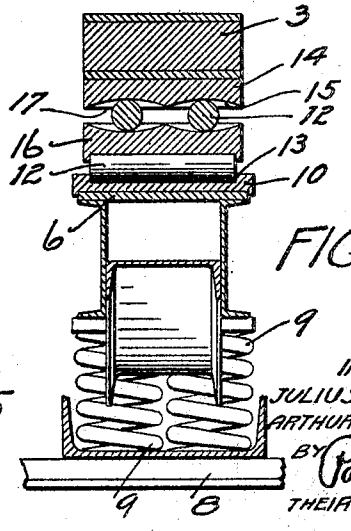


FIG. 4.

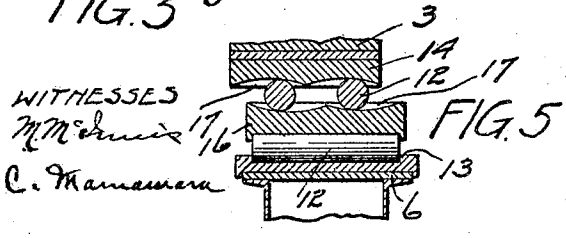


FIG. 5

WITNESSES

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JULIUS J. LAKE AND ARTHUR C. DEVERELL, OF ST. PAUL, MINNESOTA.

ANTIFRICTION-BEARING FOR RAILWAY-CARS.

No. 798,350. Specification of Letters Patent. Patented Aug. 29, 1905.

Application filed October 8, 1904. Serial No. 227,620.

To all whom it may concern:

Be it known that we, JULIUS J. LAKE and ARTHUR C. DEVERELL, of St. Paul, Ramsey county, Minnesota, have invented certain new and useful Improvements in Antifriction-Bearings for Railway-Cars, of which the following is a specification.

The object of our invention is to provide bearings for a car-body which will prevent all undue racking or twisting of the car and the strain and wear on the wheel-flanges that result from the lateral thrust or lurch of the car in rounding curves or while running on a rough track.

The invention consists generally in providing roller or antifriction bearings upon the truck-bolsters at each corner of the car whereon the entire load is supported, there being no bearing at the center plate.

Further, the invention consists in providing a double bearing at each corner, one above the other, the travelers of one bearing being movable in a direction substantially at right angles to the direction of movement of the travelers of the other bearing of the same corner.

In the accompanying drawings, forming part of this specification, Figure 1 is a side elevation of a portion of a car-truck with our improved bearing applied thereto. Fig. 2 is a transverse section through the center of the car, showing the center plate and the manner of mounting the bearing at the corner between the truck and body bolsters. Fig. 3 is a detail view of the center plate. Fig. 4 is a sectional view of the truck-bolster, showing the bearings thereon. Fig. 5 is a detail sectional view showing the movement of the upper bearing with respect to the lower one.

In the drawings, 2 represents a car body or platform having a bolster 3 and center plate 4, provided with a transverse slot 4′ to receive a pin 5, that passes through a plate 5′. These plates and the pin are similar to the parts usually employed in a center bearing; but, as shown in Fig. 2, the plates do not contact with one another, the upper one being raised a sufficient distance above the lower to throw the entire weight of the car-body and load upon the corner bearings.

6 is the truck-bolster, and 7 the wheels of one truck, having the frame, 8 whereon the bolster 6 is supported above the springs 9. Upon each end of the truck-bolsters at the four corners of the car we secure a plate 10, having a series of roller or traveler ways 11 in its upper surface. There are preferably three of these ways—one in the middle and one on each side—though a greater or less number may be employed, if preferred. The bottoms of the ways are curved upwardly on each side to cause the cylindrical rollers or travelers 12 to seek the centers thereof and return the car-body to its normal central position on the trucks whenever it is thrown out laterally in rounding a curve or on a rough track. The plate 10 is provided with flanges 13 at the ends of the ways to prevent longitudinal movement of the travelers, but permit them to roll freely back and forth in the ways with the movement of the car-body. Above the plate 10, secured to the under side of the body-bolster 3 at each corner of the car, is a second plate 14, having ways 15 in its under surface arranged to receive travelers similar to those described that move in a direction substantially at right angles to the direction of movement of the travelers in the ways of the plate 10. We prefer to provide only two ways, however, in the upper plate, while there are three in the lower one, as above described. Between the plates 10 and 14 is a floating or loose plate 16, having ways in its upper and under surfaces corresponding in number and arrangement, respectively, to those in the opposing surfaces of the plates 10 and 14. By the term "floating" or "loose" plate we mean one that is not connected or attached in any way to the fixed plates, but is free to move back and forth with the rollers in their ways. Flanges 17 prevent longitudinal movement of the travelers in the upper ways, and the bottoms of the said upper ways are curved, so that the travelers will center themselves and return the car-body to its normal position.

As will be noted from the above description, the entire load of the car is supported at the corners above the wheels where the bearing should properly be located, the bearing at the center plate being entirely eliminated, the slot therein allowing free lateral movement of the car-body upon its corner bearings. The employment of the double bearing at each corner allows the car-body and its load to move freely in either direction, one part of the bearing accommodating itself to the lateral lurch or thrust of the car on the curves and the other part taking up the forward movement. This will have the effect

of making the car ride easier, eliminating nearly all the strain thereon and reducing the wear on the wheel-flanges.

We claim as our invention—

1. A roller-bearing for railway-cars, comprising plates adapted to be secured one above the other to the truck and body bolsters respectively, and having roller-ways in their opposing surfaces, a loose or floating plate disposed between said fixed plates and having roller-ways in its upper and under surfaces corresponding respectively to the ways in said opposing fixed plates, and rollers provided in said ways, the rollers above said floating plate being movable in their ways in a direction substantially at right angles to the direction of movement of the rollers in the ways below said plate.

2. A roller-bearing for cars comprising fixed plates adapted to be secured one above the other respectively to the truck and body-bolster and having oppositely-arranged ways in their opposing surfaces, a floating plate provided between said fixed plates and having ways in its upper and under surfaces corresponding to those in the opposing surfaces of said fixed plates, and rollers fitting in said ways, substantially as described.

3. A roller-bearing for railway-cars, comprising plates adapted to be secured one above the other to the truck and body bolsters respectively, and having roller-ways in their opposing surfaces, there being a way in the lower plate on each side and one in the middle, and each way being concave in form and having flanges at the ends, and the ways in the upper plate being similarly formed and having flanged ends and being two in number, and a floating plate disposed between said fixed plates and having roller-ways in its upper and under surfaces corresponding in number and arrangement respectively to the ways in the opposing surfaces of said fixed plates, and rollers provided in said ways and adapted to roll therein with the motion of the car-body, the rollers above said plate being movable in a direction substantially at right angles to the direction of movement of the rollers below said plate, substantially as described.

4. A bearing for cars comprising plates adapted to be secured one above the other respectively to the truck and body-bolster and having oppositely-arranged ways in their opposing surfaces, a loose or floating plate provided between said fixed plates and having ways in its upper and under surfaces corresponding to those in the opposing surfaces of said fixed plates, and travelers fitting in said ways.

5. A bearing for cars comprising fixed ways mounted one above the other on the car-truck and body-bolster respectively and near the ends thereof, a loose or floating plate provided between said fixed ways and having ways in its upper and under surfaces corresponding to the opposing fixed ways, said plate being capable of movement forward or backward or to either side to accommodate itself to the end thrust or lateral lurch of the car, and travelers provided in said ways above and below said plate, substantially as described.

6. An antifriction-bearing having opposing fixed ways, a plate interposed between said ways and having ways in its upper and under surfaces said plate being loose and capable of moving forward or backward or toward either side to accommodate itself to the end thrust or lateral lurch of the load, and travelers provided in said ways, substantially as described and for the purpose specified.

In witness whereof I have hereunto set my hand at Minneapolis, Minnesota, October 1, 1904.

JULIUS J. LAKE.

Witnesses:
RICHARD PAUL,
C. MACNAMARA.

In witness whereof I have hereunto set my hand at St. Paul, Minnesota, October 3, 1904.

ARTHUR C. DEVERELL.

Witnesses:
GEORGE E. BUDD,
J. K. HOFFMAN.