J. F. O'CONNOR.

COMBINED SIDE BEARING AND TRUCK ALINING DEVICE.

APPLICATION FILED AUG. 20, 1917.

1,290,319. Patented Jan. 7, 1919.

Fig. 1

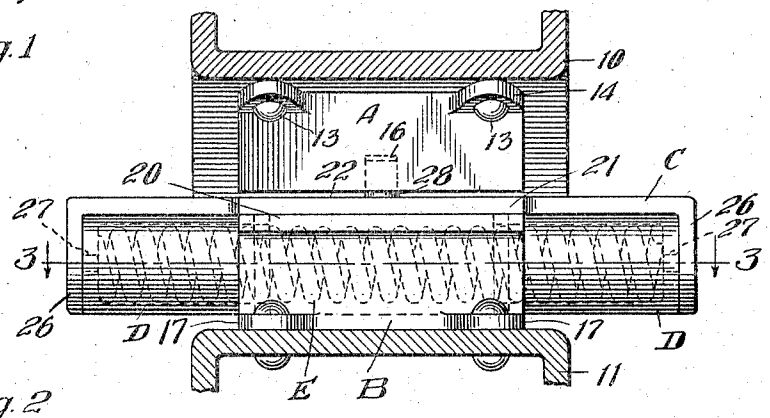


Fig. 2

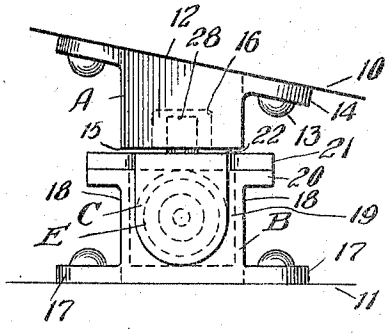


Fig. 4

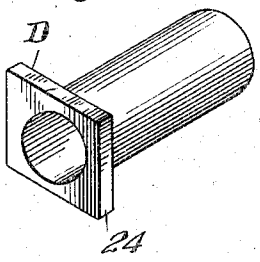
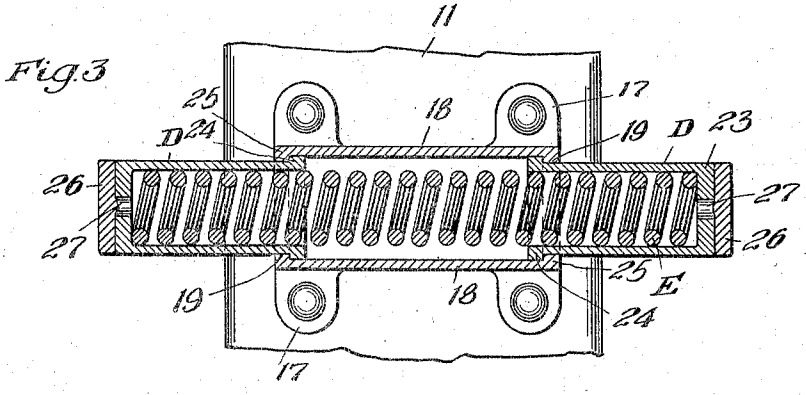


Fig. 3



WITNESSES:

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COMBINED SIDE BEARING AND TRUCK-ALINING DEVICE.

1,290,319. Specification of Letters Patent. Patented Jan. 7, 1919.

Application filed August 20, 1917. Serial No. 187,294.

To all whom it may concern:

Be it known that I, JOHN F. O'CONNOR, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Combined Side Bearings and Truck-Alining Devices, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

This invention relates to improvements in combined side bearing and truck alining device.

In the operation of railway cars, it is well known that the flanges of the wheels on the trucks are worn very rapidly which is due to the fact that the trucks, after they have been turned with respect to the car body when the car strikes a curved portion of a track, tend to remain in their twisted or turned position. In present constructions, so far as I am aware, no means are provided for returning the trucks to their normal position after the car has entered upon the straight portion of the track with the result that the trucks are not brought into proper alinement except possibly by chance.

The object of my invention is to provide efficient and simple means for returning the trucks of the car to proper position after the car enters upon the straight portion of a track after it has been running over a curve to thereby eliminate the wear of the wheel flanges which now occurs in present constructions to thereby increase the life of the wheels and effect a large saving to the railroads.

In the drawing forming a part of this specification, Figure 1 is a vertical, sectional view taken lengthwise of a car through the body and truck bolsters and showing my improvements in connection therewith. Fig. 2 is an elevational view at right angles to the sectional view illustrated in Fig. 1, and shows my improvements as applied between the body and truck bolsters of a car. Fig. 3 is a horizontal, sectional view taken substantially on the line 3—3 of Fig. 1. And Fig. 4 is a detailed perspective view of one of the spring followers.

In said drawing, 10 denotes a portion of the body bolster of a car and 11 a portion of a truck bolster which may be of any desired form. My improvements are shown as applied between the bolsters, it being understood that there would be one of my devices on each side of the center pin which pivotally connects the bolsters.

As shown in the drawing, my improved side bearing and alining device consists of an upper member A; a lower member B; a slide C; spring followers D—D; and a spring E.

The upper member A is preferably a casting having its upper face, as indicated at 12, inclined to correspond with the inclination of the under face of the body bolster and said casting A is rigidly secured to said bolster by any suitable means such as the rivets 13 passing through flanges 14 provided on the casting. The lower face 15 of the member A is arranged horizontal and is provided with a recess 16 for the purpose hereinafter described.

The lower member B is in the form of a hollow casting having flanges 17 at the four corners thereof by which it is riveted to the truck bolsters. The member B has inner and outer upstanding parallel walls 18—18 and the end walls thereof are circularly recessed, as indicated at 19—19, to accommodate the spring followers D—D. At its upper portion, the casting B is provided with horizontal bearing flanges 20—20 with which slidably coöperate corresponding flanges 21—21 on the slide C, the latter having an upper horizontal bearing face 22 which is adapted to directly engage the under bearing surface 15 of the casting A when the body of the car swings to either side and causes the side bearings to come into play.

Each of the spring followers D is in the form of a hollow cylinder having an integral end wall 23 and an annular outturned flange 24 at its inner end, the flange 24 coöperating with a corresponding inturned flange 25 on the end wall of the casting B. In this way the outward movement of the followers D is limited, as will be obvious. The spring E is mounted within the casting B and its ends are extended within the spring followers D.

The slide C, at its ends, is provided with depending flanges 26—26, each of which has

a short inturned stud 27 that seats within a corresponding perforation in the end wall 23 of the adjacent spring follower. On its upper surface and at the center, the slide C has an upwardly extending lug 28 which seats within the recess 16. The recess 16 and lug 28 are so designed that there is no relative movement between the lug and the casting A in a direction lengthwise of the car, that is parallel to the axis of the spring E, but movement is permitted in a direction at right angles thereto, that is, in a radial direction toward the king-pin which pivotally connects the bolsters and also vertically, as shown in Figs. 1 and 2. in order to accommodate the relative vertical movements between the body and truck bolsters due to the swaying of the car body. This radial movement is permitted because of the shifting positions between the parts when the bolsters are swung with respect to each other.

In operation, when the bolsters approach each other, the bearing surface 15 will seat upon the upper surface of the slide C, the two surfaces being normally separated. When thus in engagement and as the bolsters swing with respect to each other when the car runs onto a curve, it is obvious that the slide C will travel in unison with the upper bolster and slide with respect to the lower casting B. As this action occurs, one of the spring followers D will be moved toward the center of the casting B, thus compressing the spring E. In carrying out my invention, it is not intended that the capacity of the spring E shall be at all large or in any way sufficient to prevent the free and easy turning of the truck with respect to the car body when the car enters a curve. As the car enters a straight portion of the track, the truck will of course be returned to a position near normal but, unless some means are brought to bear to counteract it, the truck will remain in such a position that the flanges of the wheels will wear rapidly against the rails. As is well known, there is constant vibration of all the parts of a car when the same is running and I utilize this fact in carrying out my invention. While the spring E would not of itself be of sufficient force to positively bring the truck to proper normal position if a constant pressure were maintained between the parts of a side bearing, nevertheless, due to the constant vibration of the parts and the swaying of the car body there are short intervals of time in which the pressure on the side bearing is relieved and it is during these intervals that the spring E will act to bring the truck back to normal position, that is, with the axles at right angles to the rails and thus minimize the wheel flange wear. Not only will my device bring the truck back to its proper normal position, as above described, when the car enters a straight portion of track, but it will automatically serve to maintain the truck in such position.

Although I have herein shown and described what I now consider the preferred embodiment of my invention, the same is merely illustrative and I contemplate all changes and modifications that come within the scope of the claims appended hereto.

I claim:

1. In a device of the character described, the combination with upper and lower bolsters of a car, of upper and lower castings secured respectively to the upper and lower bolsters, a slidable member interposed between said castings, said slide member being movable in unison at all times with one of said castings and slidable with respect to the other, and a spring interposed between the relatively slidable members whereby, after the two bolsters have been moved radially with respect to each other, the spring will return the parts to normal position.

2. In a device of the character described, the combination with a casting adapted to be secured to a truck bolster, of a plate slidably mounted on said casting, a spring interposed between said plate and said casting and arranged to be compressed when the plate is moved from normal position, and means for effecting a connection between said plate and the body bolster of a car, said means being movable in unison with the body bolster of the car at all times.

3. In a device of the character described, the combination with a body bolster of a car having a casting secured to its under face, of a truck bolster having an opposed casting secured to its upper face, a slide interposed between said castings, said slide being movable with respect to the casting on the truck bolster, a spring interposed between said slide and the last named casting, and a relatively rigid connection between said slide and the upper casting.

4. In a device of the character described, the combination with a casting adapted to be rigidly secured to a bolster of a car, of a second casting adapted to be rigidly secured to an opposed bolster of the car, a plate interposed between said castings, said plate being slidable with respect to one of the castings, a pin and slot connection between said plate and the other of said castings, said pin and slot connection being so arranged that the plate moves horizontally in unison with the corresponding casting but is independently movable vertically with respect thereto, and spring means interposed between said plate and the casting with which it is slidably associated.

5. In a device of the character described, the combination with the body and truck bolsters of a car, of a casting rigidly secured to the truck bolster, a plate slidably mounted

on said casting, spring means interposed between said plate and said casting adapted to yieldingly resist relative movement therebetween, a casting secured to the body bolster, and means connecting said plate with the casting on the body bolster so arranged as to permit relative vertical movement between the plate and said casting but at the same time making said casting and said plate movable horizontally in unison at all times.

In witness that I claim the foregoing I have hereunto subscribed my name this 4th day of Aug., 1917.

JOHN F. O'CONNOR.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."