Jan. 11, 1938. A. STUCKI 2,104,840

RESILIENT SIDE BEARING ASSEMBLY

Original Filed Oct. 10, 1935

Fig. 1.

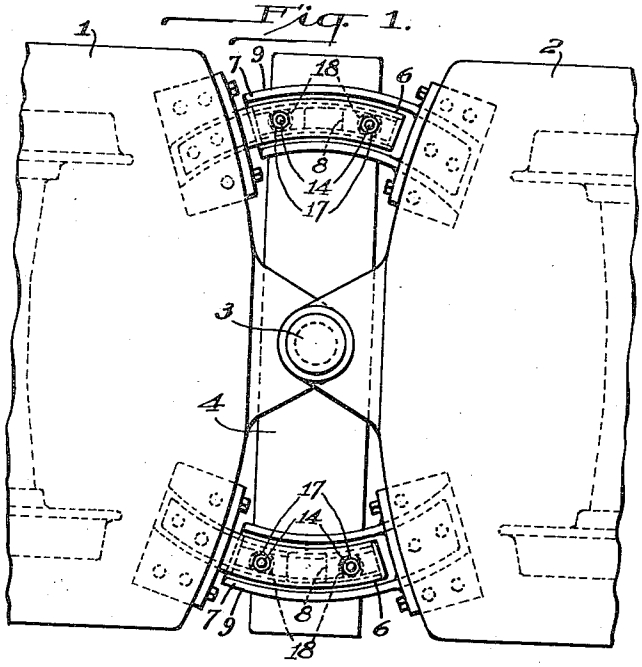
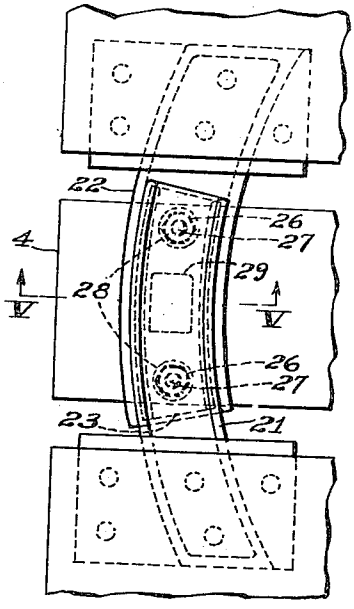


Fig. 4.



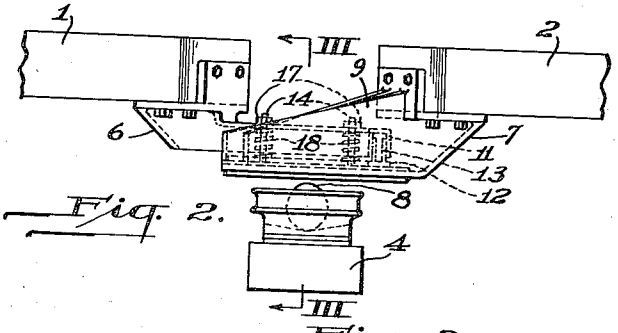


Fig. 2.

Fig. 5.

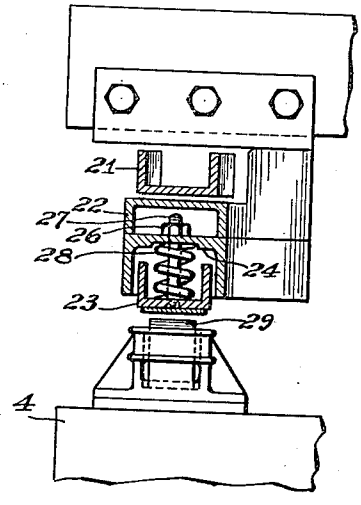
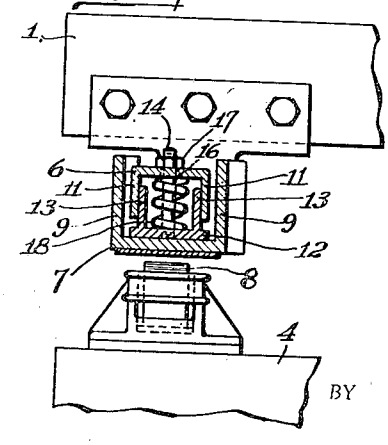


Fig. 3.



WITNESSES

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Patented Jan. 11, 1938 2,104,840

UNITED STATES PATENT OFFICE

2,104,840

RESILIENT SIDE BEARING ASSEMBLY

Arnold Stucki, Pittsburgh, Pa.

Original application October 10, 1935, Serial No. 44,338. Divided and this application June 3, 1936, Serial No. 83,277

8 Claims. (Cl. 105—4)

This invention, which is a division of that disclosed in my application Serial No. 44,338, filed October 10, 1935, relates to side bearings for railway cars, and more particularly to side bearing assemblies for use on articulated trains wherein a single truck supports the adjacent ends of the adjoining car bodies.

In articulated trains the adjacent ends of two adjacent cars are both pivoted midway between their sides on the central portion of the bolster of the same truck. This, of course, permits the cars to pivot on the truck as they travel around curves, and the connection is also formed to allow lateral tilting of the cars on the truck. To prevent the cars from tilting or rocking sideways to an undesirable degree at any time, side bearings are mounted on the bolster near its ends, and side bearing arms project from the ends of the cars and over the bearings. It is desirable that the bearing arms at one end of a car overlap, or be overlapped by, the bearing arms on the adjacent car so that the cars will tilt together. Normally there is clearance between the arms and bearings in order to allow a certain amount of pivoting between cars and trucks without the bearing arms engaging the side bearings. However, it will be understood that as the train travels along, the cars frequently rock far enough to take up this clearance and their side bearings arms strike one or the other of the underlying side bearings. These shocks are transmitted by the rigid arms to the car bodies and to the passengers riding therein, causing vibration and jarring and detracting from the smoothness of the ride.

It is among the objects of this invention to provide a side bearing assembly which reduces shocks otherwise imparted to the cars as a result of their lateral rocking, and which is strong, durable and simple in construction.

The invention is illustrated in the accompanying drawing in which Fig. 1 is a plan view of a car truck showing the ends of two car bodies pivoted thereto, and showing a side bearing assembly; Fig. 2 is a fragmentary side view of the side bearing assembly; Fig. 3 is an enlarged vertical section of the assembly taken on the line III—III of Fig. 2; Fig. 4 is a plan view of a modification of this invention; and Fig. 5 is a vertical section taken on the line V—V of Fig. 4.

Referring to Figs. 1, 2 and 3, the adjacent ends of railway cars 1 and 2 are pivotally connected together at 3 at which point they are pivotally mounted on the center of a truck bolster 4 in the usual manner. Projecting from the car ends and across the bolster near its ends are two pairs of side bearing arms 6 and 7, one pair 6 of which overlies the other pair with clearance normally between them. This overlapping arrangement permits the use of a single side bearing 8 on each end of the bolster for limiting lateral tilting of both cars. Although any suitable bearing may be used, it is preferred to use a self-centering roller side bearing, as shown in Fig. 2.

As shown in Fig. 3, each of the side bearing arms is preferably of channel shape with upper channel 6 narrower than the lower channel so that it will fit between the upwardly projecting flanges 9 of the lower channel. The arms are also arcuate about a point concentric with the axis of pivot 3 so that the upper and lower arms can move longitudinally back and forth in each other as the cars pivot (Fig. 1).

It is a feature of this invention that flanges 11 of the upper channels project downwardly into the lower channels, and that a buffer channel 12 having upwardly projecting flanges 13 telescopes upwardly into each upper channel 6. Secured in the web of the buffer channel, which rests on the web of lower channel 7, are the lower ends of studs 14 that extend upwardly through openings 16 in the web of channel 6. Nuts 17, threaded on the ends of the studs, prevent the buffer channels from being disconnected from the upper arms. Encircling these studs are coil springs 18 that are compressed between the upper arm and the buffer channel the web of which is normally held by the springs in engagement with the lower arm.

When the overlapping side bearing arms at either side of the cars move toward the underlying side bearings 8, the shock due to the lower arm striking the bearing is not so great as heretofore because the arm is not backed up by the rigid upper arm, but by the intervening buffer channel which is resiliently mounted in the upper arm. In other words, some of the shock is absorbed by the springs. The springs also prevent the upper arm from striking the lower one, and vice versa, as the arms move toward each other, and thereby eliminate the shocks of such impacts.

In the modification shown in Figs. 4 and 5 channel-shaped side bearing arms 21 and 22 are disposed web to web with a buffer channel 23 telescoping up into the lower arm. The buffer channel is suspended from a transverse partition 24 in the lower arm by means of nuts 26 and studs 27 slidably mounted in openings in the partition. The studs are encircled by coil springs

28 that absorb the shocks caused when the lower arm strikes, or is caused by the upper arm to strike, the underlying side bearing 29.

According to the provisions of the Patent Statutes, I have explained the principle and construction of my invention and have illustrated and described what I now consider to represent its best embodiment. However, I desire to have it understood that, within the scope of the appended claims, the invention may be practiced otherwise than as specifically illustrated and described.

I claim:

1. The combination with a car truck having a bolster, of articulated car bodies pivotally mounted at their ends on said bolster, side bearing arms mounted on said ends of the car bodies and projecting over said bolster with the arms on one car overlapping those on the other in vertically spaced relation, a member disposed between each pair of overlapping arms and suspended from the upper arm, and resilient means disposed between said member and upper arm for absorbing shock when the upper and lower arms move toward each other when the lower arm strikes the bolster.

2. The combination with a car truck having a bolster, of articulated car bodies pivotally mounted at their ends on said bolster, side bearing arms mounted on said ends of the car bodies and projecting over said bolster with the arms on one car overlapping those on the other, a member disposed between said bolster and each lower arm and suspended from the latter, and resilient means disposed between said member and lower arm for absorbing shock when tilting of said bodies causes said member to strike the bolster.

3. The combination with a car truck having a bolster, of articulated car bodies pivotally mounted at their ends on said bolster, side bearing arms mounted on said ends of the car bodies and projecting over said bolster with the arms on one car overlapping those on the other in vertically spaced relation, a buffer member disposed between each pair of overlapping arms, said upper arm being provided with vertical openings, means secured at their lower ends to said buffer member and projecting upwardly through said openings, and coil springs surrounding said means between the upper arm and buffer member, said buffer member serving as a bearing member for said upper arms.

4. The combination with a car truck having a bolster, of articulated car bodies pivotally mounted at their ends on said bolster, side bearing arms mounted on said ends of the car bodies and projecting over said bolster with the arms on one car overlapping those on the other in vertically spaced relation, said arms being in the shape of channels with the flanges of each upper channel projecting downwardly between the upstanding flanges of the lower channel, a buffer channel having flanges telescoping with the flanges of the upper channel, the web of the upper channel being provided with vertical openings, studs secured at their lower ends in said buffer channel and projecting upwardly through said openings, and a coil spring encircling each stud between said web and the buffer channel, said buffer channel serving as a bottom bearing member for said upper channel.

5. The combination with a car truck having a bolster, of articulated car bodies pivotally mounted at their ends on said bolster, side bearing arms mounted on said ends of the car bodies and projecting over said bolster with the arms on one car overlapping those on the other, the overlapped lower arms being of channel form with their flanges extending downwardly, a partition member extending lengthwise of each of said channels and spaced from the web thereof, said member being provided with vertical openings therethrough, a buffer channel having flanges telescoping with the flanges of the lower arm, studs secured at their lower ends in said buffer channel and projecting upwardly through said openings, and a coil spring encircling each stud between said partition member and the buffer channel, said buffer channel serving as a bottom bearing member for said lower arm.

6. The combination with a car truck having a bolster, of articulated car bodies pivotally mounted at their ends on said bolster, side bearing arms mounted on said ends of the car bodies and projecting over said bolster with the arms on one car overlapping those on the other car, a member suspended from one of said arms at each end of the bolster and adapted to be moved vertically relative to said arm, and resilient means disposed between said arm and member for biasing them apart, said member serving as a bottom bearing member for the arm from which it is suspended.

7. The combination with a car truck having a bolster, of articulated car bodies pivotally mounted at their ends on said bolster, side bearing arms mounted on said ends of the car bodies and projecting over said bolster with the arms on one car overlapping those on the other car, a buffer member disposed below one of said arms at each end of the bolster, said arm being provided with a vertical opening, means secured at its lower end to said buffer member and projecting upwardly through said opening for suspending the buffer member from said arm, and a coil spring surrounding said means and biasing said arm and buffer member apart, said member serving as a bottom bearing member for the arm from which it is suspended.

8. The combination with a car truck having a bolster, of articulated car bodies pivotally mounted at their ends on said bolster, side bearing arm means mounted on said ends of the car bodies and projecting over said bolster with the arms on one car overlapping those on the other car, and resilient means disposed below one of said arms at each end of the bolster and connected to that arm, said resilient means being adapted to absorb shock due to lateral tilting of said car bodies and impact of the lowermost of said means against the bolster.

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