A. STUCKI.

ROLLER SIDE BEARING.

APPLICATION FILED JUNE 23, 1921.

1,427,174. Patented Aug. 29, 1922.

FIG. 1.

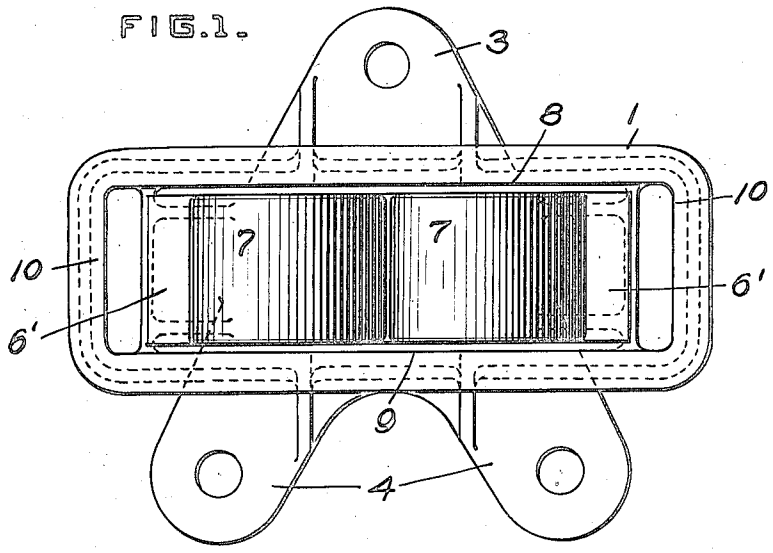


FIG. 2.

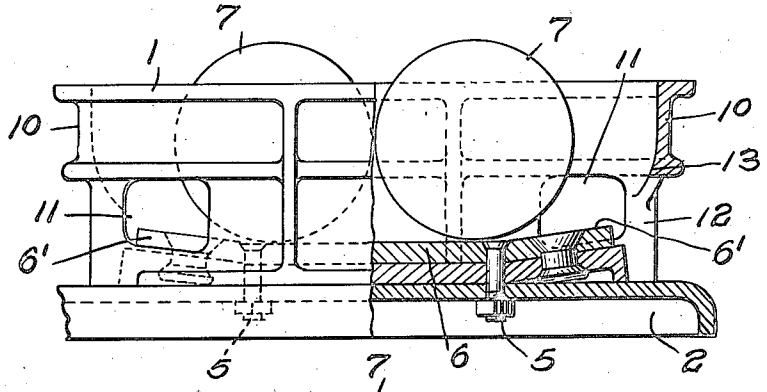
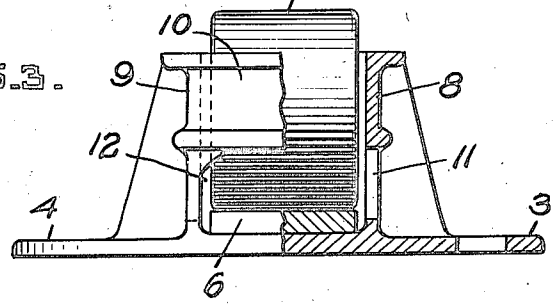


FIG. 3.



WITNESSES

J. Herbert Bradley.

INVENTOR

Arnold Stucki

By Winter & Brown

attorneys

UNITED STATES PATENT OFFICE.

ARNOLD STUCKI, OF PITTSBURGH, PENNSYLVANIA.

ROLLER SIDE BEARING.

1,427,174. Specification of Letters Patent. Patented Aug. 29, 1922.

Application filed June 23, 1921. Serial No. 479,777.

To all whom it may concern:

Be it known that I, ARNOLD STUCKI, a citizen of the United States, and a resident of Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Roller Side Bearings, of which the following is a specification.

This invention relates to side bearings for railway cars.

In prior patents, among them, No. 13,567 reissued May 20, 1913, I have illustrated and described a roller side bearing adapted for the lower bolster and comprising a housing with a freely movable roller therein, and so arranged that when the upper bolster lifts the roller will return to midway position.

The present invention is an improvement upon that type of roller bearing. Its object is to provide a bearing of this type in which the liability of the roller developing flat spots or recesses on its circumference, or the track or way upon which the roller runs becoming rough or recessed, thus interfering with the free travel of the rolling element is prevented, while at the same time retaining the simple and inexpensive construction of the patented bearing.

To this end, the invention consists primarily in providing such a bearing with a pair instead of a single roller in order that the blows of the upper bolster will be taken by the pair of rollers, thus reducing the force of blow on any one roller, and reducing the liability of the roller developing flat spots or recesses, or the track or way upon which the rollers travel being roughened or recessed, as above stated.

In the accompanying drawings, Fig. 1 is a plan view of the bearing; Fig. 2 is in part a side view and in part a vertical section thereof; and Fig. 3 is in part an end view and in part a vertical transverse section thereof.

In the drawing, the side bearing is shown adapted for a straight truck bolster but it can be readily adapted to a tapered truck bolster and to receive either a straight or a tapered body bolster.

The side bearing comprises a suitable frame or housing 1 having its lower face shaped to correspond to the top face of the truck bolster which is indicated at 2. This housing can be attached to the bolster in any suitable way and is shown as provided on one side with a lateral projecting ear or flange 3, and on its opposite side with a pair of laterally projecting ears 4 which are provided with holes for receiving bolts or rivets 5 for connecting the bearing to the bolster. Obviously, in the case of cast bolsters, the housing 1 can be cast integral with the bolster.

In the bottom of this housing, is a bearing surface 6 which can either be the bottom of the housing itself or a separate wear plate of hard, tough material such as tempered steel, secured by rivets or the like to the bottom of the housing, as shown. Rolling on this bearing surface are a pair of rollers 7 each of which is of liberal diameter and length to afford sufficient resistance against the pounding action of the body bolster, which is considerable because the clearance between the upper and lower parts of the side bearing is often quite large. The large diameter of the rollers also forms more than mere lines of contact with the bearing surface 6 and also reduces the rolling friction to a minimum.

The housing is provided with suitable barriers or walls to confine the rollers and prevent them jumping out under normal operating conditions. As shown, the housing has an upwardly projecting inside web or wall 8, an outside web or wall 9 and end walls or webs 10. The inside and outside webs or walls are provided with openings 11 and the end walls or webs are provided with openings 12, all extending down to the bearing surface 6, thereby avoiding a closed pocket and any dirt which gets into the bearing will immediately pass out through one of the several openings.

The end walls or webs are shaped to form stops for the rollers, preferably having their upper portions substantially vertical and curved as shown at 13 to the contour of the rollers, in order to provide broad contacting stops for the rollers. The side and end walls or webs extend upwardly materially above the centers of the rollers, thus

forming a cage deep enough so that the rollers cannot escape under all normal conditions of use. This also enables the openings 11 and 12 to be made large enough to insure escape of dirt. This construction provides practically a skeleton cage with side and end barriers to restrain the rollers, with the top of the cage supported from the base or bottom by posts or columns.

The end portions 6′ of the bottom bearing surface 6 are inclined or curved upwardly, as shown, so that a roller which rides up on the same will roll back by gravity towards the central portion of the bearing surface whenever the upper bolster lifts, so that normally, that is, when the upper bolster is not in contact with the rollers, they both rest on the central portion of the bottom bearing surface, and substantially equal distances from the ends of the latter. This central portion is made level, or straight, for a distance slightly greater than the diameter of one of the rollers, so that when the two rollers rest on this straight portion, in contact with each other, there is a short portion of the level bearing surface outside of the bearing point of each of the rollers. Consequently the rollers when they return to the central portion of the bearing will not always come to rest at exactly the same points and consequently the blows from the upper bolster will not always be applied to the same points of the bottom bearing surface, thus preventing the bottom bearing surface from becoming grooved or recessed as may be the case if the rollers always come to rest at exactly the same positions thereon.

The inside and outside walls of the housing are placed such distances apart that the rollers fit the space between these walls quite closely, and said rollers are of considerable diameter, so that notwithstanding that they are entirely free, they are not liable to become askew and no binding of the rollers which would prevent them from returning to their central or normal positions is likely to occur.

In use, when the car body is not swaying and is running on a straight track, the upper bolster slightly clears the rollers and consequently both rollers will be on the level or central portion of bearing surface 6 as shown in Fig. 2. Should the top bolster rest upon these rollers when the car is running around a curve, both rollers would roll in the direction in which the swiveling of the truck under the car body tends to roll them, until the foremost of the two rollers begins to ride up on the curved end portion of the bottom bearing surface, whereupon the other roller will cease to roll further. As soon as the body bolster lifts, the roller will be released and rolled by gravity back to the central portion of the bottom bearing surface, and both rollers will assume substantially the position shown in Fig. 2. Consequently, when the body bolster again comes down, its pounding action is resisted by both rollers. The return of the rollers to central position occurs immediately upon the lifting of the body bolster and consequently the blow of the body bolster never can come upon a single roller.

The housing 1 and its bearing surface 6 are shown straight from end to end, although if desired they may be curved on an arc struck from the center plate or king-pin as the center and the rollers 7 slightly tapered, that is, to the frustrum of a cone whose apex is at the center of the king-pin, and in the same manner as illustrated in my patent above identified.

The bearing described is of simple construction, is inexpensive both as to first cost and subsequent repair, is very lasting, is of a minimum number of parts, all of simple, compact and strong construction, and furthermore, pockets in the housing are avoided and therefore the accumulation of dirt is prevented. The large size of the rollers makes the device nearly frictionless, and also their substantial dimensions make them strong and lasting. Both rollers are perfectly free to travel in the housing under all changes of angular relations between the top and bottom bolsters, and will roll back to central position immediately upon the separation of the bolsters.

I claim:

1. A side bearing for lower bolsters of railway cars, comprising a housing having its bottom forming a bearing surface transverse to the bolster and provided with side and end walls or barriers, said bearing surface being inclined upwardly at its ends and level intermediate its ends, and a pair of free rolls in said housing and resting on said bearing surface and normally arranged to rest upon the level intermediate portion of the bearing surface.

2. A side bearing for lower bolsters of railway cars, comprising a housing having its bottom forming a bearing surface transverse to the bolster and provided with side and end walls or barriers, said bearing surface being inclined upwardly at its ends and level intermediate its ends, and a pair of free rolls in said housing and resting on said bearing surface and normally arranged to rest upon the level intermediate portion of the bearing surface, the side and end walls of the housing being provided with large openings at the level of the bearing surface.

3. A side bearing for lower bolsters of railway cars, comprising a housing having its bottom forming a bearing surface transverse to the bolster and provided with side and end walls or barriers, said bearing surface being inclined upwardly at its ends and

level intermediate its ends, and a pair of free rolls in said housing and resting on said bearing surface and normally arranged to rest upon the level intermediate portion of the bearing surface, the side and end walls of said housing extending upwardly beyond the center of the rollers and the upper portions of the end walls being substantially vertical to prevent the escape of the rollers.

In testimony whereof, I sign my name.

ARNOLD STUCKI.

Witness:

EDWIN O. JOHNS.