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RESILIENT ROLLER BEARING ADAPTER

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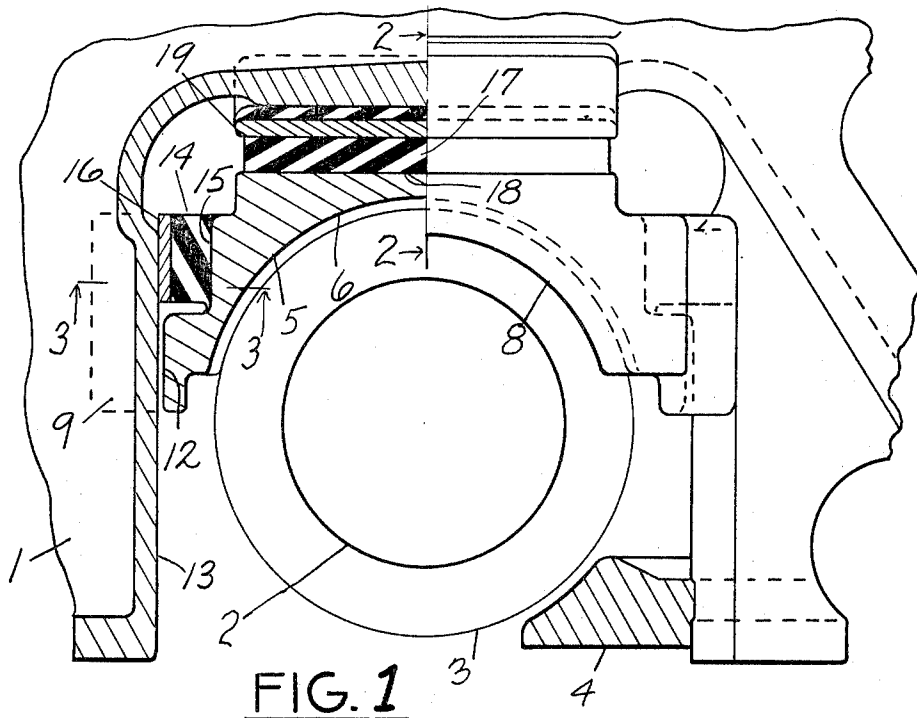


FIG. 1

FIG. 2

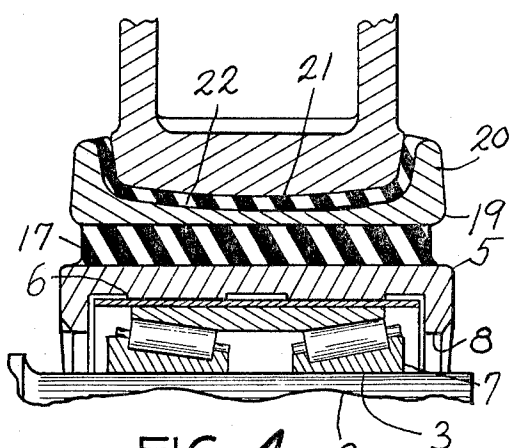
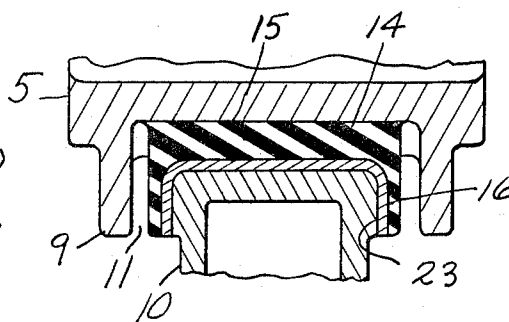
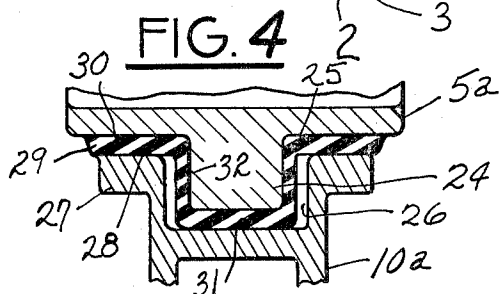


FIG. 3



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RESILIENT ROLLER BEARING ADAPTER

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1 Claim. (Cl. 105—224.1)

This invention is a roller bearing adapter for railway cars with pedestal type side frames which protects the bearing from high stresses.

In the drawing, FIG. 1 is a side elevation of a railway car side frame, partly in section; FIG. 2 is a section on line 2—2 of FIG. 1; FIG. 3 is a section on line 3—3 of FIG. 1; and FIG. 4 is a section of a modification.

In the drawing, 1 indicates the pedestal of a railway truck side frame, 2 indicates the journal, 3 indicates a roller bearing, and 4 indicates the bearing retainer. These parts are of common construction.

The bearing is mounted in the pedestal by an adapter having a cap plate 5 with its under side provided with a semicylindrical recess 6 for the bearing cup 7. The recess has end flanges 8 straddling the bearing cup.

At opposite sides of the cap plate 5 are flanges 9 straddling the pedestal jaws 10. There is a substantial clearance 11 between the flanges and the pedestal jaws which allows end play between the bearing and frame. At the lower part of the flanges 9, the cap plate is formed with a guide surface 12 having a sliding clearance with the vertical surfaces 13 of the pedestal jaws. This restricts or limits movement of the bearing fore and aft of the car. Between the upper part of the flanges 9 is a body 14 of elastomer bonded to a surface 15 on the cap plate 5 and to a channel shaped plate 16 embracing the pedestal jaw 10. The space between the surface 15 and the associated pedestal jaw is less than the thickness of the body 14 so that upon installation, the elastomer 14 is compressed between the surface 15 and the plate 16. Fore and aft motion of the adapter plate stresses the bodies 14 in tension or compression while end play stresses the bodies in shear.

At the top of the cap plate 5 is a body 17 of elastomer bonded to upwardly presented load receiving surface 18 on the cap plate and to a channel shaped top plate 19 having flanges 20 straddling the load carrying surface 21 of the frame. The upper surface of the plate 19 may have an elastomeric coating 22 to permit better distribution of the load between the section 21 of the frame and the upper surface 22 of the plate. The elastomeric coating 22 will conform to surface irregularities of the load carrying section of the frame. The body 17 yields to allow for misalignment of the normally perpendicular relationship of the journal and side frame and also to allow for endwise motion of the journal relative to the side frame. The car load stresses the body 17 in compression while the endwise motion of the journal stresses the body 17 in shear. Since the elastomer is much softer in shear than in compression, relatively small resistance is developed to endwise motion. This reduces the wheel flange wear. The endwise motion is limited by the clearance 11 between the flanges 9 and the jaws 10 but even when this motion is taken up, metal to metal contact is eliminated due to the extension of the elastomer 14 over the flanges 23 of the plate 16. The elimination of metal

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to metal contact prevents the extremely high shock forces. The elastomer also permits considerable rocking movement between the journal and frame, thereby reducing stress on both the side frame and bearing.

The modification of FIG. 4 differs in the relation of the cap plate 5a and the pedestal jaws 10a. In other respects the structure is as illustrated in FIGS. 1 and 2. The cap plate 5a has tongues 24 at the center of vertical surfaces 25. Each tongue is received in a channel or groove 26 in the adjacent pedestal jaw 10a. On opposite sides of the channel, each pedestal jaw has a flange 27 with a vertical surface 28 presented toward the surface 25 on the cap plate. Bonded to the surface 25 and the tongue 24 is a body 29 of elastomer. Sections 30 of the elastomer between the opposed surfaces 25, 28 restrict or limit movement of the bearing fore and aft of the car. Sections 31 of the elastomer between the outermost parts of the tongues 24 and the bottoms of the channels 26 also limits fore and aft movement. End play is limited by sections 32 of elastomer between the sides of the tongues 24 and the sides of the channels 26. The elastomer 29 also permits considerable rocking or tilting between the journal and frame.

What is claimed as new is:

In combination with a railway truck frame having spaced pedestal jaws and a railway car journal having a roller bearing between the pedestal jaws, an adapter cap plate between the pedestal jaws recessed on its underside to receive the roller bearing and having end play clearance with respect to the jaws, said frame having a downwardly presented load carrying surface between the upper ends of the jaws and said cap plate having an upwardly presented load receiving surface spaced below the load carrying surface, a top plate having its upper surface spaced below and presented to the load carrying surface and having upwardly extending flanges straddling said load carrying surface and in end thrust transmitting relation to the frame, said top plate having its lower surface spaced above and presented to the load receiving surface on the cap plate, a body of elastomer sandwiched between and having lower and upper surfaces respectively anchored to the upwardly presented load receiving surface of the cap plate and to the lower surface of the top plate and carrying the car load in compression and the end play in shear, and a coating of elastomer bonded to the upper surface of the top plate and engaging and conforming to the load carrying surface of the frame.

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