May 2, 1939. A. B. SEVERN 2,156,706

ROLLER SIDE BEARING

Filed July 3, 1937 2 Sheets-Sheet 1

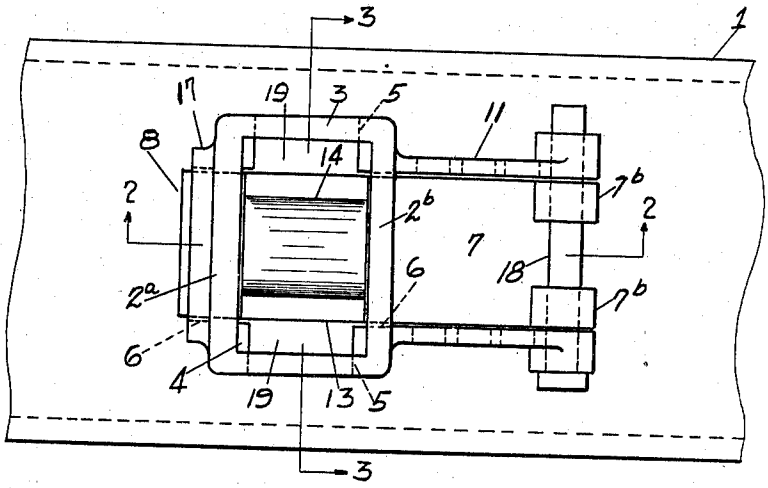


FIG. 1

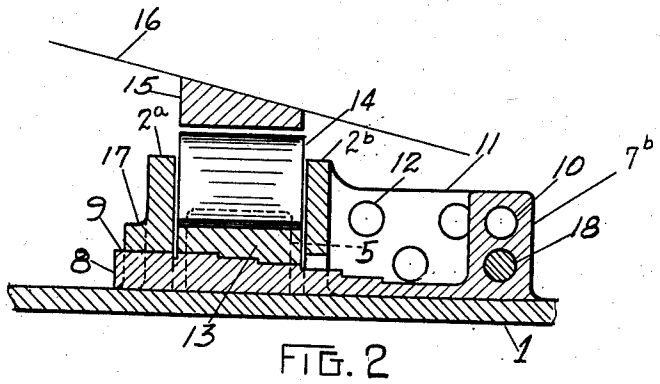


FIG. 2

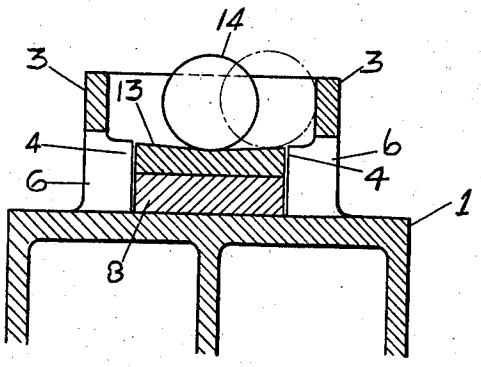


FIG. 3

INVENTOR.
BY Arthur B. Severn.
Elmer Kleiler.
ATTORNEYS.

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ROLLER SIDE BEARING

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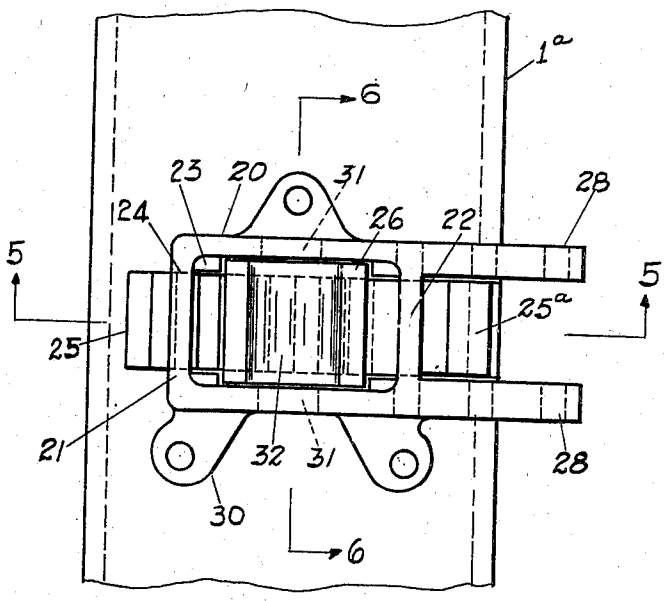


FIG. 4

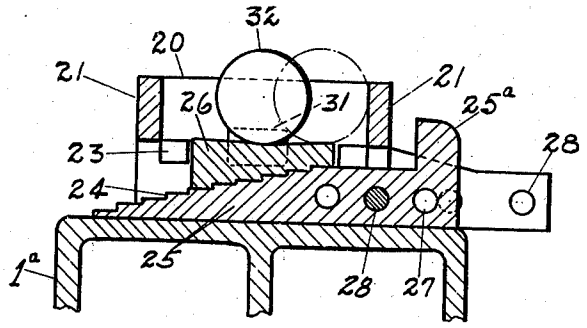


FIG. 5

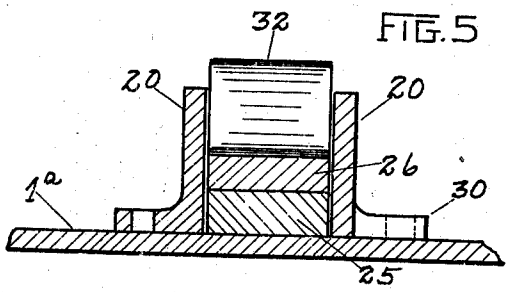


FIG. 6

INVENTOR.
Arthur B. Severn.
BY
ATTORNEYS.

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UNITED STATES PATENT OFFICE

2,156,706

ROLLER SIDE BEARING

Arthur B. Severn, Pittsburgh, Pa., assignor to A. Stucki, Pittsburgh, Pa.

Application July 3, 1937, Serial No. 151,939

10 Claims. (Cl. 308—226)

The invention pertains to roller side bearings for railroad cars and particularly of the type in which the roller can be readily adjusted in a vertical direction relative to the bearing.

An object of the invention is to provide a roller side bearing with a movable shim or stepped roller support, which upon movement relative to the roller raises or lowers the roller within the bearing.

Another object of the invention is to provide such an adjusting means which is readily accessible, easily operated, and may be securely held in any position of adjustment.

Heretofore many adjustable side bearings have been used upon railroad cars. Each of them contemplated raising or removing the roller before removing or inserting shims beneath the roller bearing plate. Such an operation required the car inspector or other person making the adjustment to carry a supply of suitable shims and also means to raise the car body to permit removal or raising of the roller. In the present invention there is no necessity for adding or removing parts of the roller bearing. No special tools are necessary to raise or lower the body to permit adjustment. The only tool necessary is a hammer which every workman or inspector carries and he need only strike the stepped support plate with the hammer to effect the adjustment. By making this stepped support plate separate from the bearing plate for the roller all adjustments can be made without removal of the roller or other parts of the bearing.

In the drawings forming part of the specification:

Fig. 1 is a plan view of a roller bearing disclosing the invention; Fig. 2 is a section taken on lines 2—2 of Fig. 1; Fig. 3 is a half end elevation and half section taken on the lines 3—3 of Fig. 1; Fig. 4 is a plan view of a bearing containing a modification of my invention; Fig. 5 is a section taken on lines 5—5 of Fig. 4; Fig. 6 is a view showing half in end elevation and half in section of the lines 6—6 of Fig. 4.

Referring now to Figs. 1 to 3 inclusive of the drawings, reference character 1 shows a portion of a railway car truck bolster having an integral pocket formed on the upper face thereof comprising side walls 2 disposed transversely of the bolster and connected at their end portions by end walls 3 to complete the pocket. Interiorly of the pocket and at each corner thereof are lugs 4 of less vertical height than the walls 2 and 3 for a purpose hereinafter to be described.

Each end wall 3 has an aperture 5 therein extending upwardly from the base of the wall for a portion of the height of the wall and as shown in the drawings is preferably of a width equal to the spacing between the lugs 4. These apertures are for the purpose of making the bearing self-clearing as hereinafter set forth. Each side wall 2 of the body has apertures 6 therein extending upwardly from the base thereof and of a width substantially equal to the spacing between the lugs 4.

Disposed longitudinally of the bolster 1 and upon the upper face thereof is a stepped bearing member 7 extending transversely of the pocket through the apertures 6 in the side walls 2. This stepped bearing member 7 has an end portion 8 of a depth and width substantially filling the aperture 6 in the pocket side wall 2^a. An upper face 9 is provided with a series of steps extending transversely thereof and reducing the depth of the member 7 in a direction longitudinally thereof. This stepped portion of the upper face 9 is of a length sufficient to extend beyond the pocket side wall 2^b. At the end of the bearing member 7 and in spaced relationship to the pocket side wall 2^b is an integrally formed upwardly extending portion 7^b having a plurality of vertically spaced apertures 10 therein which extend transversely of the member 7. Extending outwardly from the pocket side wall 2^b and on opposite sides of the member 7 are vertically disposed walls 11 of a height substantially equal to the vertical height of the portion 7^b of the member 7 and having apertures 12 therein, these apertures being so spaced as to register with one or the other of the vertically spaced apertures 10 as the member 7 is advanced within the pocket a distance equal to the width of one of the stepped bearing surfaces of the upper face 9 of the bearing member 7.

Disposed within the pocket and within the restricted area of the pocket as formed by the corner lugs 4 is a roller bearing plate 13. The bottom of the bearing plate has stepped bearing faces therein corresponding to the upper face of the member 7 and is supported thereon. The upper face of the member 13 is concave in a direction transversely of the bolster and longitudinally of the pocket side walls 2. Disposed within the pocket and upon the bearing plate 13 is a roller 14 moving longitudinally of the pocket side walls 2 and of a diameter so that the periphery of the roller extends above the walls 2 and 3 of the pocket. As is usual in this type of bearing the roller forms a bearing for a wear plate 15 secured on the underface of the body bolster indicated at 16.

For the purpose of reinforcing the side wall 2^a a beading 17 is disposed on the outer face of the side wall 2^a around the aperture 6 therein.

In assembling the bearing the stepped bearing member 7 is inserted in the apertures of the pocket side walls 2 and moved longitudinally of the pocket until the end portion 8 extends past the inner face of the side wall 2^a. The roller bearing plate 13 is placed within the pocket

on the member 7 and thereafter the roller 14 is inserted. A bolt 18 is passed through the registering apertures 10 and 12 of the portion 7b of the member 7 and the walls 11 respectively as shown in Fig. 1 of the drawings thus locking all parts in position. When it is desired to lower the roller within the pocket the bolt 18 is removed and the portion 7b struck with a hammer advancing the member 7 one or more steps as desired and the bolt 18 replaced to again lock the member 7 in position.

By reason of the roller bearing plate 13 stopping short of the end walls 3 of the pocket an opening 19 is formed therein through which dirt or other debris can fall during the operation of the bearing and pass out of the pocket through the apertures 5 in the end walls 3. This feature makes the bearing self-clearing and prevents it being clogged during operation.

From the foregoing it will be obvious that considerable labor is saved in the adjusting operation. With the ordinary type bearing it is necessary to remove the car from service, place jacks upon the ends of the body bolster, raise the body a sufficient distance to permit removal of the roller and bearing plate in order to insert or remove shims but with the present invention the only tool needed is a hammer and the adjustment can be effected as set forth without removing the car from service.

Referring now to Figs. 4, 5 and 6 of the drawings, the invention is shown in a modified form adapted for use in that type of bearing in which a separate pocket is fastened to the upper face of the bearing. In these figures, reference character 1a indicates a portion of a railway car truck bolster having mounted on the upper face thereof and adjacent each end a casting comprising side walls 20 disposed transversely of the bolster and connected at one end by an end wall 21 and intermediate the ends by an end wall 22 to form a pocket. At each corner of the pocket and extending upwardly from the base thereof are lugs 23 which are of less vertical height than the side walls 20. The pocket end walls 21 and 22 have apertures 24 therein extending upwardly from the base of the wall to substantially the height of the lugs 23 and of a width substantially equal to the space between said lugs. The pocket side walls continue beyond the end wall 22 and are of less vertical height to form guides for a purpose hereinafter set forth.

Upon the upper face of the bolster and extending longitudinally of the pocket is a stepped bearing member 25 having an inclined upper face formed of a series of stepped flat bearing surfaces extending transversely of the member 25 and upon which is supported a roller bearing plate 26 disposed within the pocket and between the lugs 23. At the thicker end of the member 25 is an upwardly extending head 25a and extending transversely of the member 25 as such thickened portion and adjacent the head 25a are apertures 27. Each of the pocket side walls 20 have suitably spaced apertures 28 therein to receive the bolt 29 for locking the stepped bearing member 25 in position. For the purpose of securing the pocket casting to the bolster suitably formed lugs 30 are formed thereon and are riveted or bolted to the bolster by means of suitable fastening members.

As in the previously described embodiment of the invention the apertures 24 in end wall 21 provide for the removal of debris collected during the operation of the car and in order to remove water or other debris which may form on the bearing plate 26, apertures 31 are preferably formed in the pocket side walls 20 intermediate the end walls 21 and 22 and adjacent the upper face of the bearing plate 26.

As in the previously described embodiment of the invention, the roller 32 is mounted within the pocket and upon the bearing plate 26 and vertical adjustment for the roller is provided by moving the stepped bearing member 25 transversely of the bolster. By providing a plurality of apertures 27 in the member 25 and spacing the apertures 28 intermediate the apertures 27 in the member 25, excepting for the registering apertures in walls 20 and member 25 adjacent the roller bearing plate 26, one of the apertures in the member 25 will always coincide with one of the apertures in the walls 20 regardless of the position of the member 25 in making adjustments.

As in the previously described exemplification of the invention, but one tool is necessary to effect vertical adjustment of the bearing, it being obvious that it is only necessary to remove the bolt 29 and strike or pry the head 25 toward or away from the end wall 22 of the pocket the desired distance before reinserting the bolt 29.

The drawings and specification disclose what is now contemplated as the preferred forms of my invention. Many changes in the details of construction will suggest themselves to those skilled in the art and it is to be understood I do not wish to limit myself to the exact forms of the invention as disclosed except as necessitated by the scope of the appended claims.

Having thus described the invention what I claim as new and desire to secure by Letters Patent is:

1. The combination in a roller side bearing of a pocket having connected walls and a bottom, apertures in opposite walls extending upwardly from said bottom, a stepped supporting member disposed in said pocket and inserted through said apertures, a roller bearing plate disposed in said pocket and having a stepped base engaging the stepped supporting member, said stepped supporting member being freely movable in one direction beneath said roller bearing plate and within said opposite wall apertures, and a roller movable on said bearing plate within said pocket.

2. In a roller side bearing in combination, spaced walls forming a pocket, apertures adjacent the bases of opposite walls, a movable member disposed in said apertures and extending transversely of the pocket, a roller bearing member within said pocket and superposed on said movable member, the contiguous faces of said members comprising a series of bearing faces in different planes whereby the roller bearing member is raised and lowered within the pocket by relative movement between the said members, and a roller mounted on said bearing member for rolling movement thereon.

3. The combination in a roller side bearing of a pocket, apertures in opposite walls extending upwardly from the bases thereof, a member disposed in said apertures and connecting said walls, a roller bearing plate supported on said member within said pocket and restrained from all except vertical movement relative to the pocket walls, the contiguous faces of said roller bearing plate and said member comprising a series of steps each in a different plane, said series extending on said member to adjacent one end thereof and beyond the roller bearing plate, a roller movably

mounted on said bearing plate and extending above the pocket walls.

4. The combination in a roller side bearing of a pocket, apertures in opposite walls extending upwardly from the bases thereof, a member disposed in said apertures and connecting said walls, a roller bearing plate supported on said member within said pocket and restrained from all except vertical movement relative to the pocket walls, the contiguous faces of said roller bearing plate and said member comprising a series of steps each in a different plane, said series extending on said member to adjacent one end thereof and beyond the roller bearing plate, a roller movably mounted on said bearing plate and extending above the pocket walls, and means for locking said member in each position of adjustment.

5. In an adjustable side bearing in combination, a roller pocket, a roller bearing plate in said pocket, a roller movably mounted on said bearing plate, apertures in two opposing walls of said pocket, an adjusting member disposed beneath said roller bearing plate and projecting through one of said apertures, contiguous surfaces of adjusting member and roller bearing plate having stepped bearing surfaces, which latter continue to adjacent one end of the adjusting member, spaced projections on one of said apertured walls embracing the protruding portion of the adjusting member and suitable apertures in said projections and adjusting member adapted to coincide to permit passage of a locking member to secure the adjusting member in position beneath the roller bearing plate as said adjusting member is moved one or more stepped bearing surfaces beneath the bearing plate.

6. In an adjustable roller side bearing in combination, a roller pocket, apertures in two opposite pocket walls adjacent the base thereof, an adjusting member disposed in said apertures for movement transversely of said walls and projecting beyond one of said walls, stepped bearing surfaces on said adjusting member extending in an ascending series from outwardly of the inner face of one apertured wall to the inner face of the opposite wall, a roller bearing plate within said pocket and provided with a concave upper surface and a stepped lower surface engaging the bearing surfaces of the adjusting member, a roller within the pocket and movable on said concave surface of the bearing plate, said roller projecting above said pocket walls and adjusted vertically by moving said adjusting member inwardly of the pocket.

7. In an adjustable roller side bearing in combination, a roller pocket, an aperture in one wall of said pocket, an adjusting member extending through said aperture and into said pocket, a series of flat bearing surfaces formed as steps on said adjusting member, a roller bearing plate disposed in said pocket and supported by said adjusting member, a roller within said pocket upon said bearing plate for movement thereon and projecting above said pocket, means including a series of flat bearing surfaces associated with said adjusting member bearing surfaces and said roller bearing plate for effecting vertical adjustment of said roller within the pocket when the adjusting member is moved relative to said means to successively engage the bearing faces of said means with the stepped bearing faces of the adjusting member.

8. In an adjustable roller bearing in combination, a roller pocket including a pair of opposing walls, a roller bearing plate between said walls, said plate having an upper face sloping from the intermediate portion upwardly toward the ends of the plate and in inclined bottom face sloping from one edge of the plate to the opposite edge, a roller mounted on said upper face for movement thereon and extending above said pocket walls, a series of steps throughout said inclined face providing a plurality of horizontal bearing faces joined by vertical bearing faces, an aperture in one of said pocket walls, a movable adjusting member inserted into the pocket through said aperture beneath said bearing plate and extending beyond said apertured wall, a series of similar stepped bearing faces on said adjusting member engaging the stepped bearing faces of the bearing plate and extending beyond one edge thereof.

9. In an adjustable roller bearing in combination, a roller pocket including a pair of opposing walls, a roller bearing plate between said walls, said plate having an upper face sloping from the intermediate portion upwardly toward opposite edges of the plate and an inclined bottom face sloping from one edge of the plate to the opposite edge, a roller mounted on said upper face for movement thereon and extending above said pocket walls, a series of steps throughout said inclined face providing a plurality of horizontal bearing faces joined by vertical bearing faces, an aperture in one of said pocket walls, a movable adjusting member inserted into the pocket through said aperture beneath said bearing plate and extending beyond said apertured wall, a series of similar stepped bearing faces on said adjusting member engaging the stepped bearing faces of the bearing plate and extending beyond one edge thereof, an upwardly extending projection on said adjusting member in spaced relation to a wall of the roller pocket, a plurality of vertically spaced apertures in said upwardly extending projection, spaced wall portions extending outwardly from said pocket to lie on opposite sides of said apertured projection on the adjusting member, a series of apertures in said latter walls spaced longitudinally of the adjusting member to effect the registering of one thereof with one of said apertures in said adjusting member whenever the adjusting member is moved a distance of one or more steps relative to the roller bearing plate and a pin for insertion through said registering apertures.

10. In a roller side bearing in combination, a roller pocket having end and side walls, a roller bearing plate disposed between the pocket side walls and in spaced relation to the end walls, means on said side walls preventing relative movement between the bearing plate and side walls in a direction toward the end walls, a roller moving on said bearing plate and retained thereon by engagement with the end walls, said roller projecting above said side walls, apertures in said end walls adjacent the bases thereof, apertures in said side walls, an adjusting member longer than the spacing between said side walls and projecting within said pocket beneath said bearing plate and through one of said side wall apertures, a series of stepped horizontal bearing faces on the adjacent surfaces of the roller bearing plate and adjusting member whereby movement of the adjusting member in opposite directions relative to the bearing plate raises and lowers the bearing plate within said pocket.

ARTHUR B. SEVERN.