

No. 871,408.

PATENTED NOV. 19, 1907.

J. JACOB.
SIDE BEARING FOR RAILWAY CARS.
APPLICATION FILED JAN. 10, 1906.

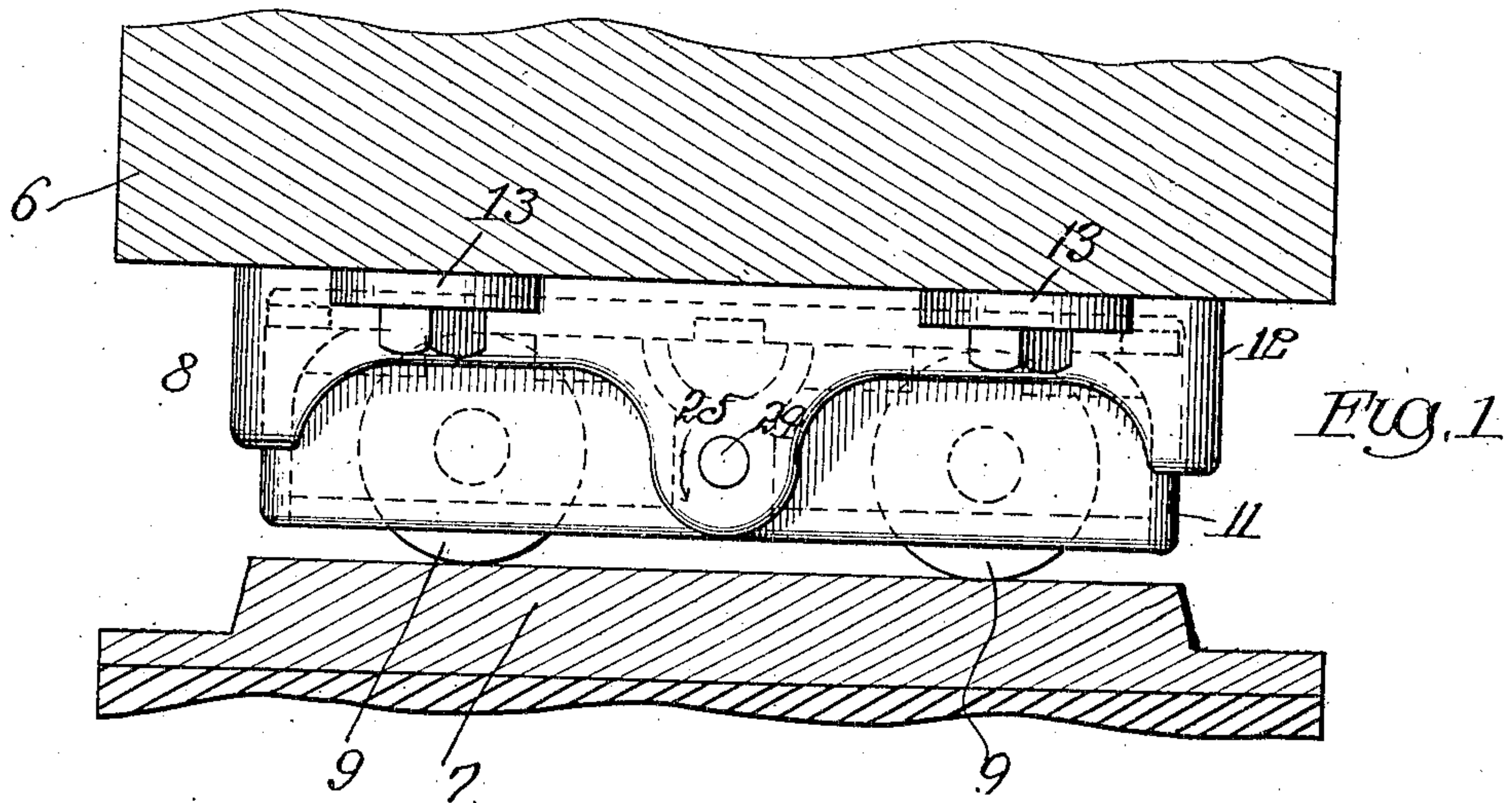


FIG. 2

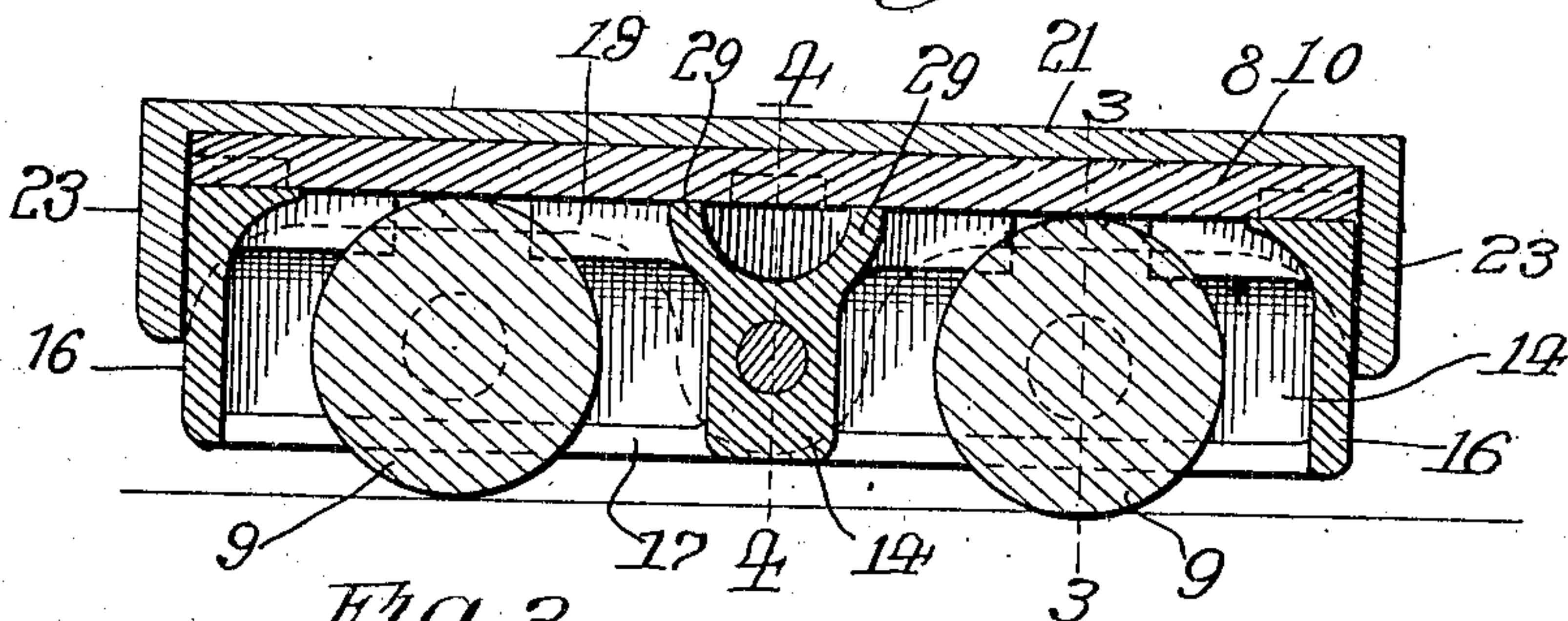


FIG. 4

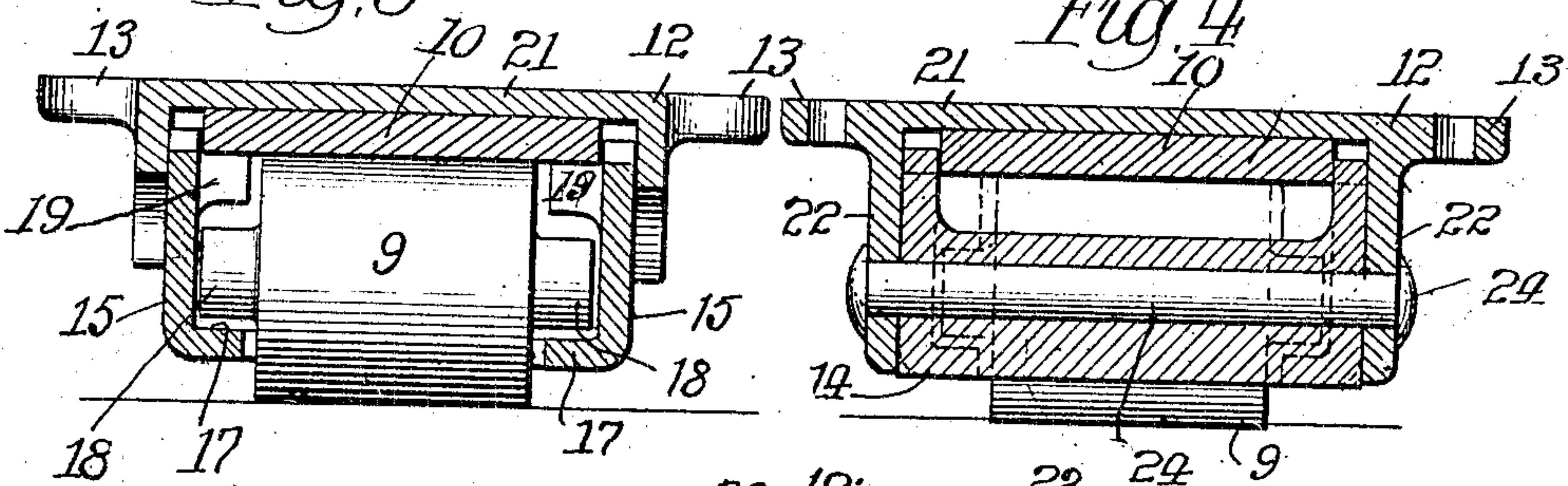
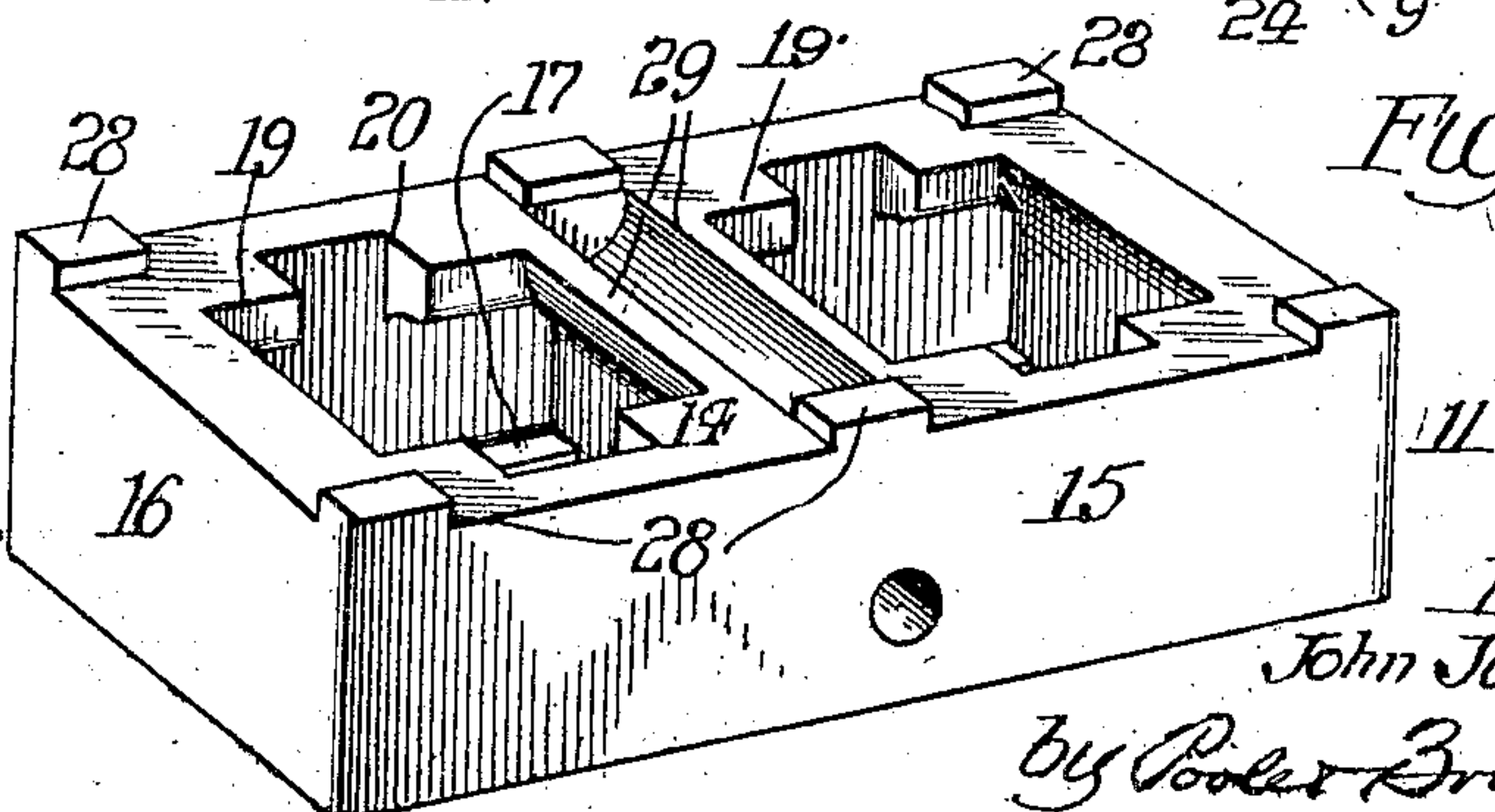


FIG. 5

Witnesses
H. W. Bennett
W. H. Hall



Inventor
John Jacob
by Charles Brown
his Attys

UNITED STATES PATENT OFFICE.

JOHN JACOB, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO EDWIN S. WOODS, OF CHICAGO, ILLINOIS.

SIDE BEARING FOR RAILWAY-CARS.

No. 871,408.

Specification of Letters Patent.

Patented Nov. 19, 1907.

Application filed January 10, 1906. Serial No. 295,403.

To all whom it may concern:

Be it known that I, JOHN JACOB, a citizen of the United States, of Chicago, in the county of Cook and State of Illinois, have
5 invented certain new and useful Improvements in Side Bearings for Railway-Cars; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying
10 drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in side-bearings for railway cars of that kind
15 adapted to be interposed between the car-bolster and the truck of a railway car, in such manner as to afford an antifriction bearing between said bolster and truck upon the occasion of relative angular movement of the
20 truck and car, as when the car is passing around a curve.

The invention consists in the matters hereinafter set forth and more particularly pointed out in the appended claims.

25 Among the objects of my invention is to provide a strong and durable bearing of the character specified, one which may be readily assembled and as readily taken apart for the purpose of repairing or replacing any of the
30 parts thereof, and to provide a bearing possessing these qualities which may be economically manufactured.

In the drawings:—Figure 1 is a side elevation of a roller bearing made in accordance
35 with my invention, showing a portion of the car bolster and the truck associated therewith. Fig. 2 is a longitudinal vertical section thereof. Fig. 3 is a transverse section, taken on line 3—3 of Fig. 2, showing the
40 bearing roller in elevation. Fig. 4 is a transverse section, taken on line 4—4 of Fig. 2. Fig. 5 is a perspective view of the main casting of the bearing in which the rollers are mounted.

45 A roller side bearing made in accordance with my invention embraces, in general terms, an elongated two-part casing or shell which receives the roller and provided in its top with a bearing surface engaged by the roller,
50 and open at its bottom to permit the roller to project therethrough for contact with a lower bearing surface. The two-part casing or shell embraces a lower member in which the roller is mounted to have free movement both

horizontally and vertically, and an upper 55 member fitted to and attached to the lower member and provided with fastening devices by which the bearing is attached to the bolster. In the construction herein shown, the lower member of the shell or casing is open 60 at its top and the roller is introduced to the roller chamber of said member through the open top thereof, and the upper member of the shell is designed to provide a wall which closes the open top of said lower member. 65 The lower member of the shell is provided with tracks which support the roller when the latter is below and free from the upper bearing surface, whereby the roller is at this time free to adjust itself longitudinally of the 70 shell to present new points of contact to the bearing surfaces upon their next contact, and the roller is movable vertically relatively to the track so as to be free from the track when the roller engages both the upper and 75 lower bearing surfaces. One or more rollers may be employed in each bearing. In the present instance I have shown two, and have illustrated a form of casing or shell which admits of the use of two rollers, while main- 80 taining them independent in their action.

As shown in the drawings, 6 designates the car bolster to which my bearing is attached, and 7 an upwardly facing bearing plate fixed to the truck underneath. 85

8 designates my improved side bearing, as a whole. It comprises a suitable casing or shell containing one or more bearing rollers 9, two being herein shown, which are adapted for bearing contact with the lower bearing 90 plate 7, and an upper bearing plate 10 in the top of the casing or shell. The casing or shell is composed of two parts, a lower member 11 that receives the rollers 9 and an upper member 12 that is attached to the lower 95 member and is itself provided with apertured lugs 13 by which the bearing is attached to the car bolster.

As herein shown, the lower member of the shell or casing consists of a generally rectan- 100 gular, hollow casting formed to constitute two chambers to receive the rollers 9. Said chambers are separated by a transverse partition 14 whereby the rollers operate independently in their chambers and are at all 105 times free from contact with each other. Said lower member of the shell comprises side walls 15 and end walls 16, preferably

made integral with each other, and is open at its bottom and top to permit rolling contact of said rollers, through said openings with the upper and lower bearing surfaces. The upper bearing plate is shown as made separate from the upper and lower members of the shell. Said bearing plate rests upon the top of said upper member and is confined between the upper and lower members. The side walls of the casing are provided near their lower margins with horizontal, inwardly directed tracks 17, and the rollers 9 are provided with oppositely extending trunnions or end bearings 18 adapted to engage said tracks. Said tracks are located at such distance from the upper bearing plate 10 that when the rollers are supported by their trunnions on the tracks 17, the bearing faces or treads of the rollers are free from the upper bearing surface, or the plate 10; and said rollers have vertical movement in the casing relatively to the tracks so that when the rollers are engaged with the upper and lower bearings surfaces, and weight is, therefore, transmitted through the bearing rollers from the upper to the lower bearings surfaces, the trunnions are free from said tracks 17. The side walls of the lower member of the casing or shell are provided at their upper margins with inwardly extending ledges or flanges 19 and, when the rollers are introduced into their chambers through the open top of said lower member, said flanges are cut away to provide notches 20 through which the trunnions of the roller passes when the roller is inserted in place. The upper member of the casing comprises a top wall 21 between which and the top of the lower member the bearing plate 10 is confined, side walls 22 and end walls 23, said side and end walls fitting in overlapping relation closely outside the side and end walls of the lower member. The two parts of the casing or shell thus formed are attached together by means of a bolt or rivet 24 that extends transversely through lugs 25, formed on the lower margins of the side walls of the upper member of the shell, and through the transverse partition wall 14 before referred to.

The upper bearing plate 10 rests upon the end walls and the flanges or extensions 19 of the side walls of the lower member of the casing is held from lateral displacement by means of lugs 28, 28 rising from the upper side of said lower member of the casing. The said lugs are made of less depth than the thickness of the bearing-plate, whereby the clamping engagement of the upper wall of the upper member of the shell is exerted upon said bearing plate to hold or confine the same fixedly between the upper and lower members of the casing. The partition wall 14 of the lower member of the casing which divides the same into two roller chambers is herein shown as provided on its upper margin with

divergent extensions or flanges 29, 29 which increases the extent of the bearing surface for the upper bearing plate.

By reason of the two-part construction of the casing or shell for the rollers 9, the bearing is capable of being readily assembled and applied to the bolster and may be also readily taken apart for the purpose of repair or replacement of any of the parts thereof. The overlapping arrangement of the upper and lower members of the casing or shell produces an exceedingly strong and durable construction. The casing is further greatly strengthened by the presence of the rivet or bolt 24 which extends transversely thereof and rigidly connects the side wall thereof, this construction preventing spreading of the side walls of the casing. Such advantage is found also in a casing having single side walls instead of double walls, as herein shown.

It will be furthermore observed that the wear plate, located between the rollers and the upper wall of the chamber, consisting of the plate 21, and said plate, constitute means, when the parts are assembled, to hold or confine the rollers in the roller chamber and that no necessity occurs for providing the tracks or flanges at the lower side of the chamber with notches for the roller trunnions to permit the insertion of the roller into and its removal from the chamber.

In co-pending applications filed by me on February 11th, 1907, Serial Numbers 356,779 and 356,780 are shown side bearings wherein the rollers are confined in the casings by wear-plates, but in said latter constructions the casing in which is formed the roller chamber consists of an integral casting and the parts are so arranged that the wear plate may be inserted into the roller chamber through the openings through which said roller extends for contact with an exterior bearing surface.

I claim as my invention:—

1. In a roller bearing, a casing provided with an elongated roller chamber, a roller removably mounted in said chamber and provided with trunnions, flanges on the side walls of the casing adapted for engagement by said trunnions, and a wear plate removably fitted within said chamber, and arranged to confine said roller in said chamber.
2. In a roller bearing, a casing provided with an elongated roller chamber, a roller removably mounted in said chamber and provided with trunnions, flanges on the side walls of the casing adapted for engagement by said trunnions, a wear plate removably fitted within said chamber and arranged to confine the roller in the chamber, and means for locking the wear-plate in place.
3. In a roller bearing, a chambered casing, a roller removably mounted therein provided at its ends with trunnions, said casing being

provided with an opening to receive the roller and with notches at the sides of the opening through which the trunnions of the roller pass when the roller is inserted into and removed from the casing, flanges on the side walls of the casing adapted for engagement by said trunnions, and a wear plate removably fitted in said casing and constructed and arranged to confine the roller in the casing.

4. In a roller bearing, a chambered casing, a roller removably mounted therein provided at its ends with trunnions, said casing being provided with an opening to receive the roller and with notches at the sides of the opening through which the trunnions of the roller pass when the roller is inserted into and removed from the casing, flanges on the side walls of the casing adapted for engagement by said trunnions, and a wear plate removably fitted within said casing and having a part so disposed relatively to said notches as to prevent the trunnions from passing through the notches when the wear plate is in place.

5. In a roller bearing, a chambered casing, a roller removably mounted therein provided at its ends with trunnions, said casing being provided with an opening through which the roller passes when inserted into and removed from the casing, flanges on the side walls of the casing on which the trunnions are adapted to rest and roll, a wear plate adapted to be removably fixed in said casing between the roller and the wall of the casing located opposite to said opening and arranged to confine the roller in the casing, and means for locking said wear plate in place.

6. In a roller bearing, a casing provided with an elongated roller chamber having a top wall, a roller removably mounted in said chamber and provided with trunnions, tracks on the side walls of the casing on which said trunnions are adapted to rest and roll, said roller having vertical movement relatively to said tracks, and a wear-plate removably fitted in said chamber between said roller and top wall, and bearing upwardly against a downwardly facing part of the casing, and arranged to confine said roller in said chamber.

7. In a roller bearing, a casing comprising an upper and a lower member formed to provide an elongated roller chamber open at one side, a roller therein provided with trunnions and extending through said open side of the chamber for contact with a bearing exterior to the casing, and a wear plate removably fitted within the chamber between the roller and the wall of the casing opposite said opening, the upper part of the lower member being arranged to provide an opening through which the roller is inserted into the chamber at a time when the wear plate is removed from the chamber whereby

said plate, when in place, confines the roller in the chamber.

8. In a roller bearing, a casing comprising an upper and a lower member formed to provide an elongated roller chamber open at one side, a roller therein provided with trunnions and extending through said open side of the chamber for contact with a bearing exterior to the casing, and a wear plate removably fitted within the chamber between the roller and the wall of the casing opposite to said opening, the lower member of said casing opposite to the latter opening being arranged to provide an opening through which the roller is inserted into the chamber at a time when the wear-plate is removed from the casing whereby the wear plate, when in place, confines the roller in the chamber, the intermediate part of said wear plate occupying said latter opening.

9. In a roller bearing, a casing comprising an upper and a lower member formed to provide an elongated roller chamber open at one side, a roller therein provided with trunnions and extending through said open side of the chamber for contact with a bearing exterior to the casing, and a wear plate removably fitted within the chamber between the roller and the wall of the casing opposite to said opening, the part of the lower member of said casing opposite to said latter opening being formed to provide an opening through which the roller is inserted into the chamber at a time when the wear plate is removed from the casing whereby said wear plate when in place confines the roller in the chamber and means for removably locking the wear plate in the casing.

10. In a roller bearing, a casing comprising an upper and a lower member formed to provide a downwardly opening, horizontal elongated roller chamber, a roller therein projecting through the lower open side thereof and provided at its ends with trunnions, tracks on the side walls of the casing on which the said trunnions are adapted to rest and roll, said roller having vertical movement relatively to the tracks and a wear plate removably fitted within the chamber between the top wall thereof and the roller, the upper part of the lower member of said casing being formed to provide an opening through which the roller is inserted into the chamber at a time when the wear plate is removed, and the wear plate constituting means for confining the roller in said chamber.

11. In a roller bearing, a casing comprising an upper and a lower member formed to provide a downwardly opening, horizontal, elongated roller chamber, a roller therein projecting through the lower open side thereof and provided at its ends with trunnions, tracks on the side walls of the casing on which said trunnions are adapted to rest and roll, said

roller having vertical movement relatively to the tracks, a wear plate fitted within the chamber between the top wall thereof and the roller, and means for removably locking said wear plate within the chamber, the upper part of the lower member of casing being formed to provide an opening through which the roller is inserted into and removed from the chamber at a time when the wear plate is removed, and the wear plate constituting means for confining the roller in said chamber.

12. In a roller bearing, a casing comprising an upper and a lower member formed to provide an elongated roller chamber open at one side, a roller therein provided with trunnions and extending through said open side of the chamber for contact with a bearing exterior to the casing and a wear plate removably fitted in the chamber between the roller and the wall of the casing opposite to said opening, the lower member of said casing opposite to said opening being formed to provide an opening through which the roller is inserted into the chamber at a time when the wear plate is removed from the chamber, and the casing being provided in its side walls at the sides of said last mentioned opening with notches through which the roller trunnions pass when the roller is inserted into and removed from the casing, the construction being such that the wear plate confines the roller in the chamber.

13. A side bearing for railway-cars comprising a casing or shell made of separable upper and lower members attached together, the upper member being provided with fastening devices and a roller mounted in the lower member and adapted for rolling contact with upper and lower bearing surfaces, the former of which is in the top of the casing, said roller having free rolling movement in the casing endwise of the latter and vertical movement relatively to the upper bearing surface and tracks in the casing or shell on which the roller is rollingly supported when free from the upper bearing surface.

14. A side bearing for railway cars comprising a casing or shell made of separable upper and lower members, the upper member being provided with attaching devices and having walls which fit outside of and are attached to the lower member, and a roller mounted in said lower member of the shell or casing and adapted for rolling contact, through openings in the top and bottom thereof, with upper and lower bearing surfaces, said roller being mounted in the shell or casing in a manner to be supported on the side walls of the casing when free from the upper bearing surface, and having movement vertically and endwise of the casing or shell.

15. A side bearing for railway cars comprising a casing or shell consisting of separable upper and lower members, the lower member being open at its top and bottom, and the upper member being provided with attaching devices and comprising a top wall

and side and end walls which fit outside of and are attached to the lower member, and a roller in the shell or casing adapted for rolling contact, through the upper and lower openings in the lower member, with upper and lower bearing surfaces, said lower member being provided with tracks located in position to support the roller when the latter is free from the upper bearing surface, and the roller having free movement in the shell both endwise of the latter and vertically with respect to said tracks.

16. A side bearing for railway cars comprising a casing or shell made of separable upper and lower members, the upper member having walls which fit outside of and are attached to the lower member, and a roller mounted in said lower member and adapted for rolling contact through openings in the upper and lower sides of the lower member, with upper and lower bearing surfaces, said roller having movement vertically and longitudinally in the casing or shell and mounted in the lower member in a manner to be supported on the side walls thereof when free from the upper bearing surface, said upper bearing surface being formed on a plate made separate from the two members of the casing and clamped between the same.

17. A side bearing for railway cars comprising a casing or shell made of separable upper and lower members, the lower member being open at its top and bottom and the upper member having a top wall and side and end walls, which latter fit outside of the lower member and are attached thereto, a bearing plate fitted to the top of said lower member and interlocked therewith to hold the plate from lateral displacement, the upper member having a top wall which fits over said plate and being attached to said lower member, and a roller in said shell adapted for rolling contact, through the open upper and lower sides of the bottom member, with said bearing plate and with a lower, upwardly facing bearing surface, said casing or shell being provided with tracks to support the roller when the latter is below and free from the upper bearing plate, and the said roller having free movement in the shell both endwise of the latter and vertically with respect to the tracks.

18. A side bearing for railway cars comprising a casing or shell consisting of separable upper and lower members, the lower member being open at its top and bottom and divided by a central, transverse partition into two separate roller chambers, and the upper member being provided with attaching devices and comprising a top wall

and side and end walls which fit outside of and are attached to the lower member, and a roller in each chamber of the shell or casing adapted for rolling contact, through the upper and lower openings in the lower member, with upper and lower bearing surfaces, said lower member being provided with tracks located in position to support the rollers when the latter are free from the upper bearing surface, and the rollers having free movement in the shell both endwise of the latter and vertically with respect to said tracks.

19. A side bearing for railway cars comprising a casing having depending side walls and open at its bottom, a roller mounted in the casing and adapted for rolling contact with upper and lower bearing surfaces located in the top of, and below, the casing respectively, said roller being mounted in the shell in a manner to be supported on the side walls thereof when free from the upper bearing surface and having free movement endwise of the casing and vertically with respect to the upper bearing and a bolt extending transversely between and connecting the side walls of the casing.

20. A side bearing for railway cars comprising a casing having depending side walls and open at its bottom, two rollers located one in each end of the casing and adapted for rolling contact with upper and lower bearing surfaces located in the top of, and below, the casing respectively, said rollers

being mounted in the shell in a manner to be supported on the side walls thereof when free from the upper bearing surface and having free movement endwise of the casing and vertically with respect to the upper bearing, and a bolt located between the rollers and extending between and connecting the side walls of the casing.

21. A side bearing for railway cars comprising a casing or shell made of separable upper and lower members, the upper member being provided with attaching devices and having walls which fit outside of the lower member, a bolt extending transversely through the casing and the overlapping side walls for fastening the upper and lower members together, and a roller mounted in said lower member of the shell or casing and adapted for rolling contact, through openings in the top and bottom thereof, with upper and lower bearing surfaces, said roller being mounted in the shell or casing in a manner to be supported on the side walls of the casing when free from the upper bearing surface, and having movement vertically and endwise of the casing or shell.

In testimony, that I claim the foregoing as my invention I affix my signature in presence of two witnesses, this 26th day of December A. D. 1905.

JOHN JACOB.

Witnesses:

EDWIN S. WOODS,
GEO. R. WILKINS.