

No. 862,399.

PATENTED AUG. 6, 1907.

J. JACOB.
ROLLER BEARING.
APPLICATION FILED JULY 5, 1906.

2 SHEETS—SHEET 1.

Fig. 1.

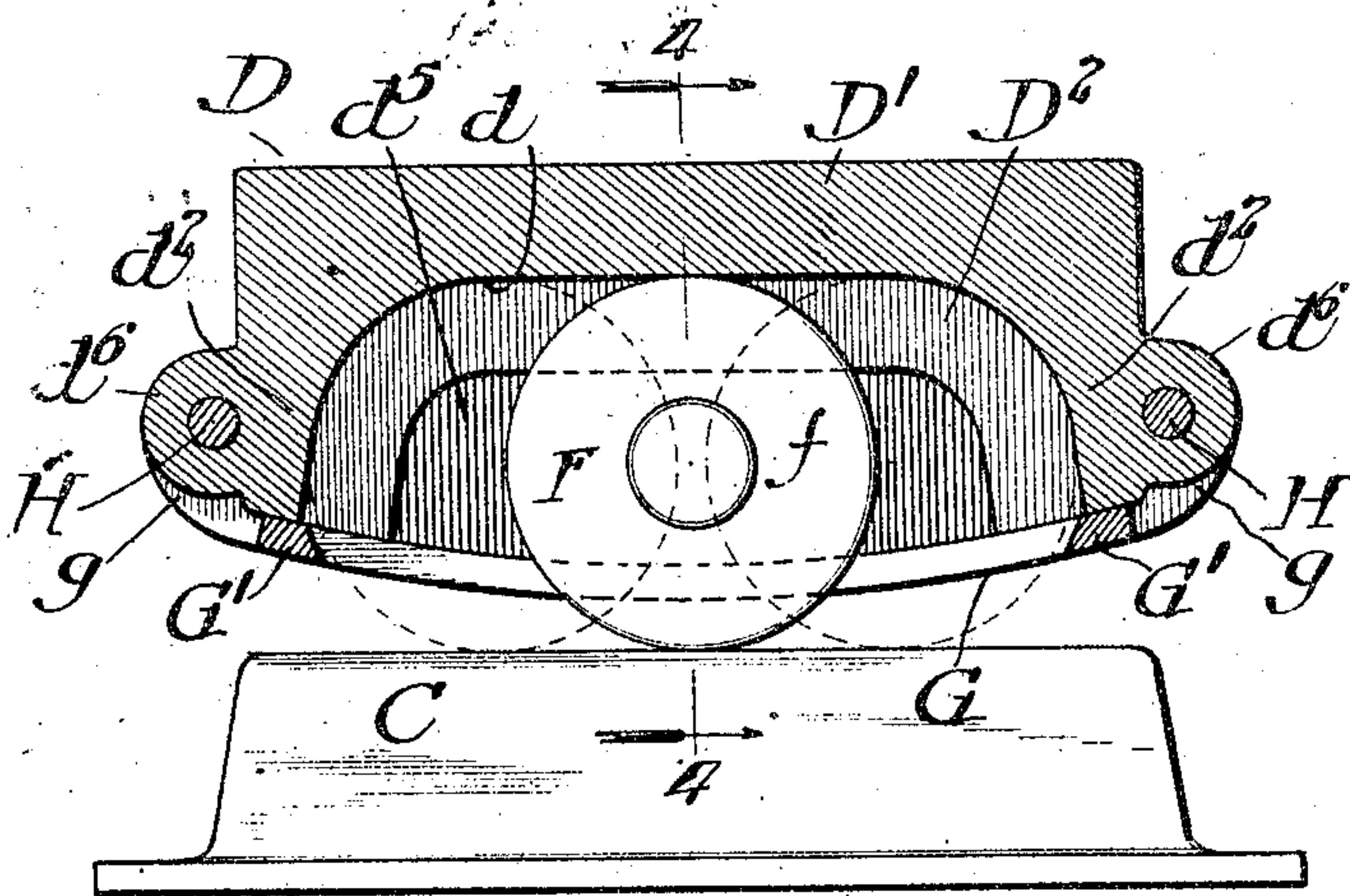
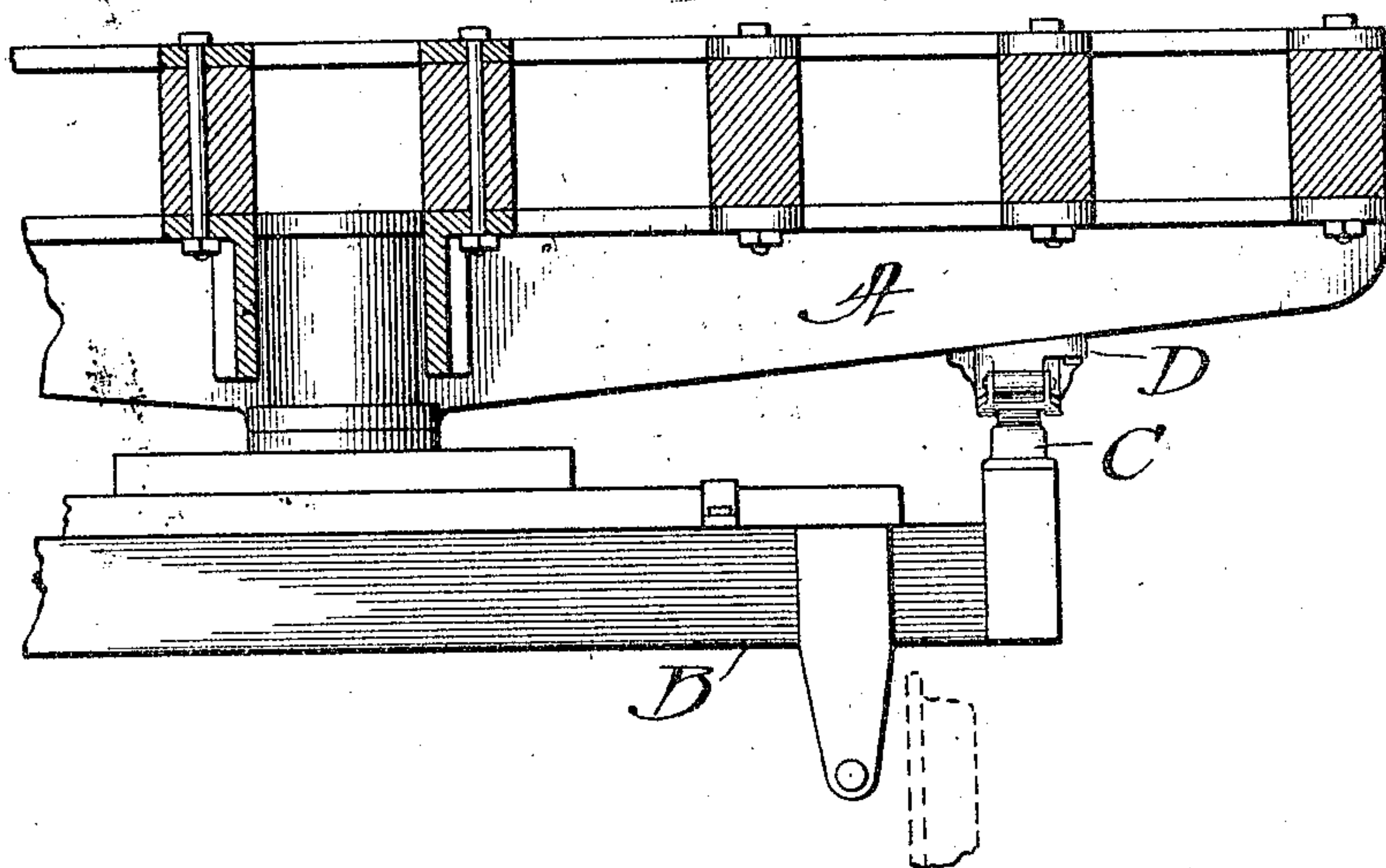


Fig. 2.

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Inventor:
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by Paul Brown
His Attorneys

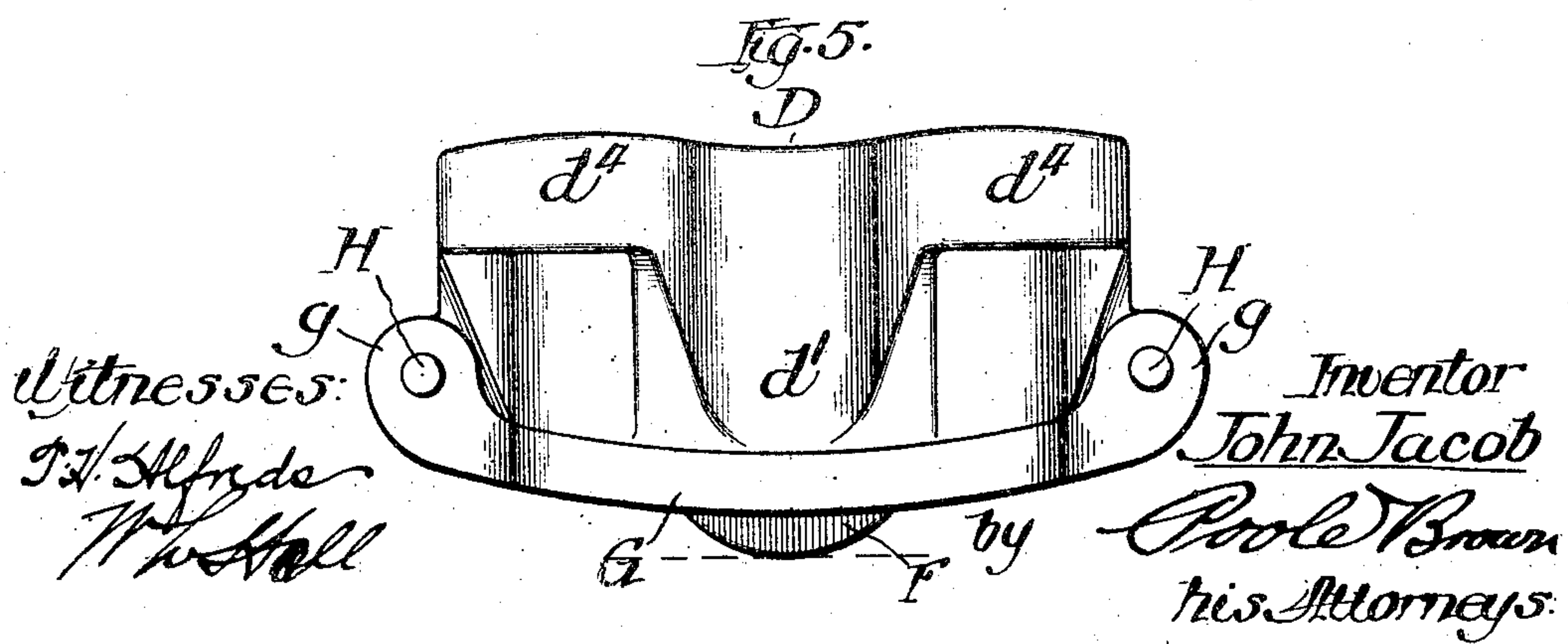
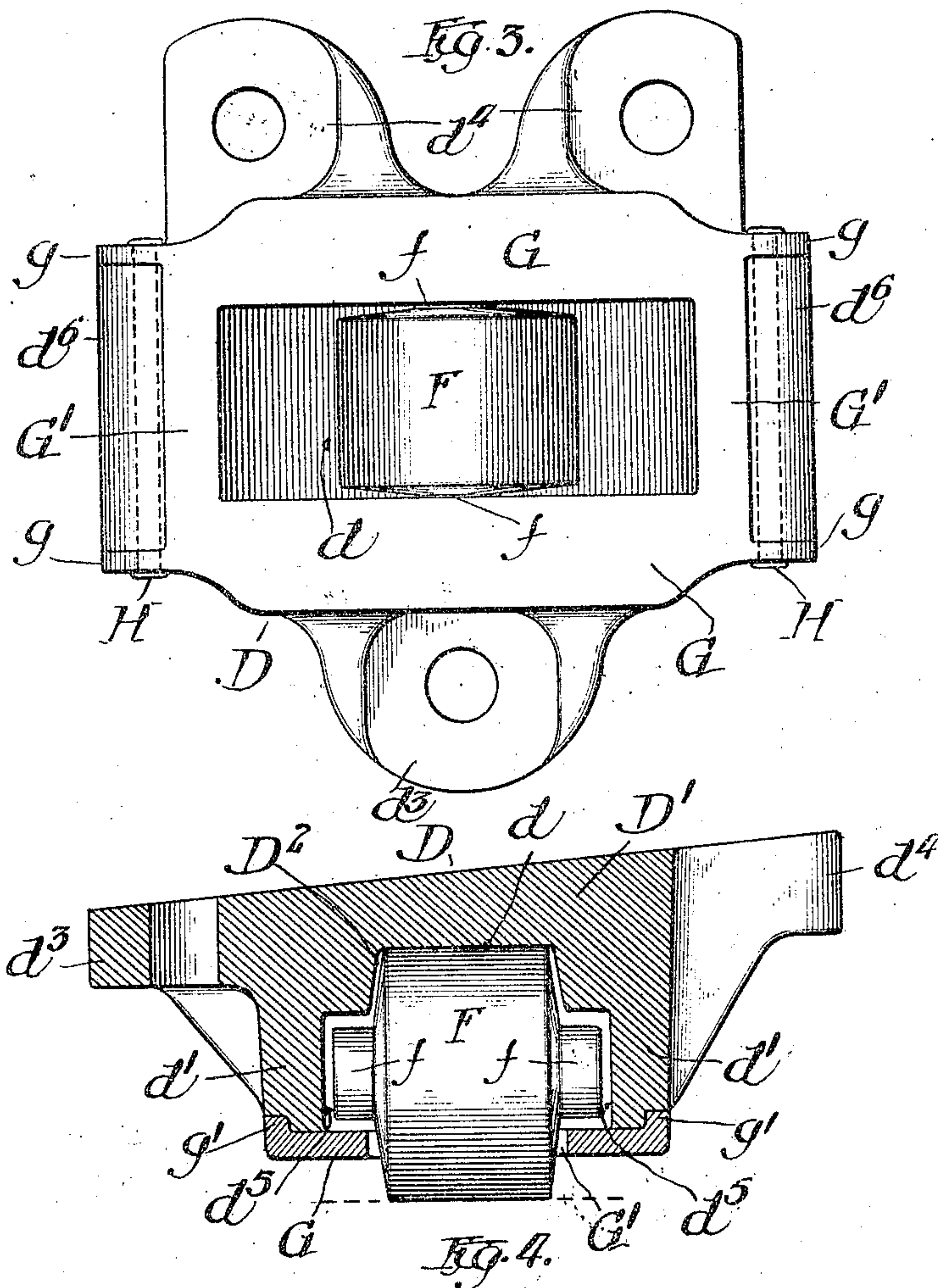
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

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

ROLLER-BEARING.

No. 862,399.

Specification of Letters Patent.

Patented Aug. 6, 1907.

Application filed July 5, 1906. Serial No. 324,847.

To all whom it may concern:

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

10 This invention relates to improvements in side bearings for railway cars of the general type shown in the prior patent to Woods, No. 809,599, granted January 9th, 1906, and adapted to be interposed between the car bolster and the truck of a railway car in a manner to afford an antifriction bearing between the bolster and truck upon the occasion of relative angular movement of the car and truck, as when the car is passing around a curve.

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

Among the objects of the invention is to improve and simplify the construction of bearings of this character, to minimize the liability of breakage of the bearing roller casing during use or transportation of the bearing, to facilitate the placing and the removal of the roller into and from the casing, and to produce a bearing having these characteristics which may be economically manufactured.

30 In the drawings:—Figure 1 illustrates the manner in which my improved bearing is attached to the truck and car bolster of a railway car. Fig. 2 is a longitudinal section of the upper bearing casing illustrating the roller and lower bearing member in side elevation. Fig. 3 is a bottom plan view of the bearing member. Fig. 4 is a transverse section, taken on line 4—4 of Fig. 2. Fig. 5 is a side elevation of the upper bearing.

As shown in the drawings, A represents a portion of the body bolster of the car and B the corresponding part of the truck. Said truck is provided with a bearing member or plate C having an upwardly facing bearing surface. Attached to the lower side of the body bolster, vertically above said bearing plate C, is the upper bearing member, designated as a whole in Fig. 1 by D. Said upper bearing member consists generally of a cast metal casing D¹ formed to provide a longitudinal, downwardly opening roller chamber D², having at its top a downwardly facing bearing surface *d*, and one or more rollers *R* seated in said chamber and projecting through the lower open side thereof for contact with the upper surface of the bearing plate C and adapted for engagement also with the bearing surface *d*. It is with respect to the upper bearing member to which the present invention relates. The said casing comprises a top wall, on

the lower side of which is formed the bearing surface *d*, side walls *d*¹ and end walls *d*² *d*³, the said walls inclosing the bearing roller chamber D². The casing is attached to the body bolster by means of apertured lugs *d*⁴ *d*⁵, the latter arranged in a pair on one side of the casing, and the other singly on the other side thereof. The side walls of the casing are formed to provide recesses *d*⁶ which receive the trunnions or end bearings *f* of the roller.

In accordance with my invention, the lower walls of said trunnion recesses, which constitute tracks upon which the roller is supported when it drops out of contact with the upper bearing surface *d*, comprise continuous bars or plates G G that are separate from and removably fitted to the lower side of the casing in such manner that the removal of said track bars permits the roller to be freely inserted into or removed from the roller chamber. When said bars are fitted to the casing, the roller is held in place thereby. The upper faces of said bars are continuous thereby affording a continuous track for the trunnions of the rollers when the roller is supported thereby. As herein shown, said tracks are curved downwardly from each end of the casing towards the center thereof, whereby the roller is self-centered when supported on the tracks, as in the construction of the Woods patent before referred to. The trunnion recesses are made of such width that the roller has vertical movement in the casing relatively to the tracks, as well as longitudinal movement thereon, due to the length of the roller casing. As herein shown, said track bars are formed parts of an integral casting, being joined at their ends by integral transverse pieces G¹ G¹. The said casting embracing said track bars is attached to said casing, in the present construction, by means of rivets or bolts H H extending horizontally through apertured extensions or lugs *d*⁷ *d*⁸ at the ends of said casing and through apertured ears *g* *g* at the ends of said track bar frame, which ears overlap said casing lugs. In order to prevent too great stress being brought upon the ears or lugs *g*, due to lateral pressure thereon, the said track bar frame is provided at its sides with longitudinal ribs or flanges *g*¹ *g*¹ which fit into complementary longitudinal recesses formed in the outer sides of the lower margins of the side walls of the casing, as most clearly shown in Fig. 4.

In practice, the main body of the casing may be made of cast steel, suitably chilled to form the top bearing surface of the roller chamber, (or a hardened plate may be inserted therein,) while the lower member thereof, constituting the tracks for the trunnions or end bearings of the roller, may be made of malleable iron. This construction of the parts is advantageous inasmuch as the tracks, constituting the lower walls of the trunnion recesses, are thinner than the other parts

of the casting, and, by reason of the greater durability found in malleable iron, produces a device which may not only be made lighter than bearings of this character as previously constructed, but which also minimizes or
 5 entirely avoids the tendency of breakage at thin parts of the shell. Heretofore it has been a common practice to provide notches in the lower walls of the recesses or the trunnion tracks through which the trunnions are passed when the roller is introduced into, or removed
 10 from, the roller chamber. In such prior constructions, the liability of breakage of the lower recess walls or trunnion tracks at the notches has proved a serious objection, not only in the use of the device, but such breakage occurs during transportation thereof. In the
 15 present construction, no liability of such breakage arises, thereby effecting a considerable saving in the way of maintenance of the device.

Another advantage of making the track bars of a tough, durable and relatively light metal is that the
 20 height over all of the device may be appreciably reduced, thus contributing not only to lightness but to compactness.

It will be observed that the construction described permits a defective roller to be readily replaced, it being only necessary to remove the rivets or bolts H and detach the track bar casting, after which the roller may be readily inserted into the lower open side of the roller chamber; and when the track bar casting is fixed in place the roller is effectually held in the casing.
 25 Either of said rivets H may constitute a hinge when the other rivet is removed, whereby the track member may be swung downwardly away from the chamber member without completely detaching the track member from the chamber member when a roller is to be re-
 30 placed.

It is to be understood that the term trunnions herein employed is not limited to the form of trunnions or end bearings herein shown, but includes any form of end bearings for the rollers by which the rollers may be sup-
 40 ported on the tracks.

I claim as my invention:—

1. A roller bearing for railway cars comprising a casing consisting of an upper member provided with a downwardly opening, elongated roller chamber and a lower
 45 member formed to provide laterally separated tracks for the end bearings of a roller, a roller in said chamber provided with end bearings adapted to rest and roll on said tracks, said roller having rolling movement endwise of the

chamber and adapted for vertical movement relatively to the tracks, and means for removably fastening said track
 50 member in place comprising overlapping apertured lugs at the ends of said members and rivets extending horizontally through said lugs, said connection permitting the track member to be swung towards and away from the upper member of the casing about one of said rivets when the
 55 other rivet is removed.

2. A roller bearing for railway cars, comprising a casing consisting of an upper member formed to provide a downwardly opening, elongated roller chamber, a lower member comprising two laterally separated track bars connected at
 60 their ends by integral transverse bars that fit against the lower faces of the upper member at the ends of said chamber, a roller in said chamber provided with end bearings adapted to rest and roll on said track bars, said roller having rolling movement endwise of the chamber and
 65 adapted for vertical movement relatively to the track bars, apertured lugs extending outwardly from said transverse connecting bars fitting in overlapping relation to apertured lugs at the ends of the upper member of the casing, and horizontal rivets extending through said overlapping
 70 lugs.

3. A roller bearing comprising a casing consisting of an upper member provided with a downwardly opening, elongated roller chamber and a lower member formed to provide laterally separated tracks for the end bearing of a
 75 roller, said tracks inclining downwardly from the ends of the casing towards the longitudinal center thereof, a roller in said chamber provided with end bearings adapted to rest and roll on said tracks, said roller having rolling movement endwise of the chamber and vertical movement
 80 relatively to the tracks and means for removably fastening said track member in place comprising overlapping apertured lugs at the ends of the members and rivets extending horizontally through said lugs.

4. A roller bearing comprising a casing consisting of an
 85 upper member provided with a downwardly opening, elongated roller chamber and a lower member formed to provide laterally separated tracks for the end bearing of a roller, a roller in said chamber provided with end bearings adapted to rest and roll on said tracks, said roller having
 90 rolling movement endwise of the chamber and vertical movement relatively to the tracks, means for removably fastening said track member in place comprising overlapping apertured lugs at the ends of said members and rivets extending horizontally through said lugs and longitudinal
 95 flanges on said lower member engaging complementary, laterally facing shoulders on the upper member to sustain the lower member under lateral stress.

In testimony, that I claim the foregoing as my invention I affix my signature in presence of two witnesses, this 2nd
 100 day of July A. D. 1906.

JOHN JACOB.

Witnesses:

TAYLOR E. BROWN,
 GEORGE R. WILKINS