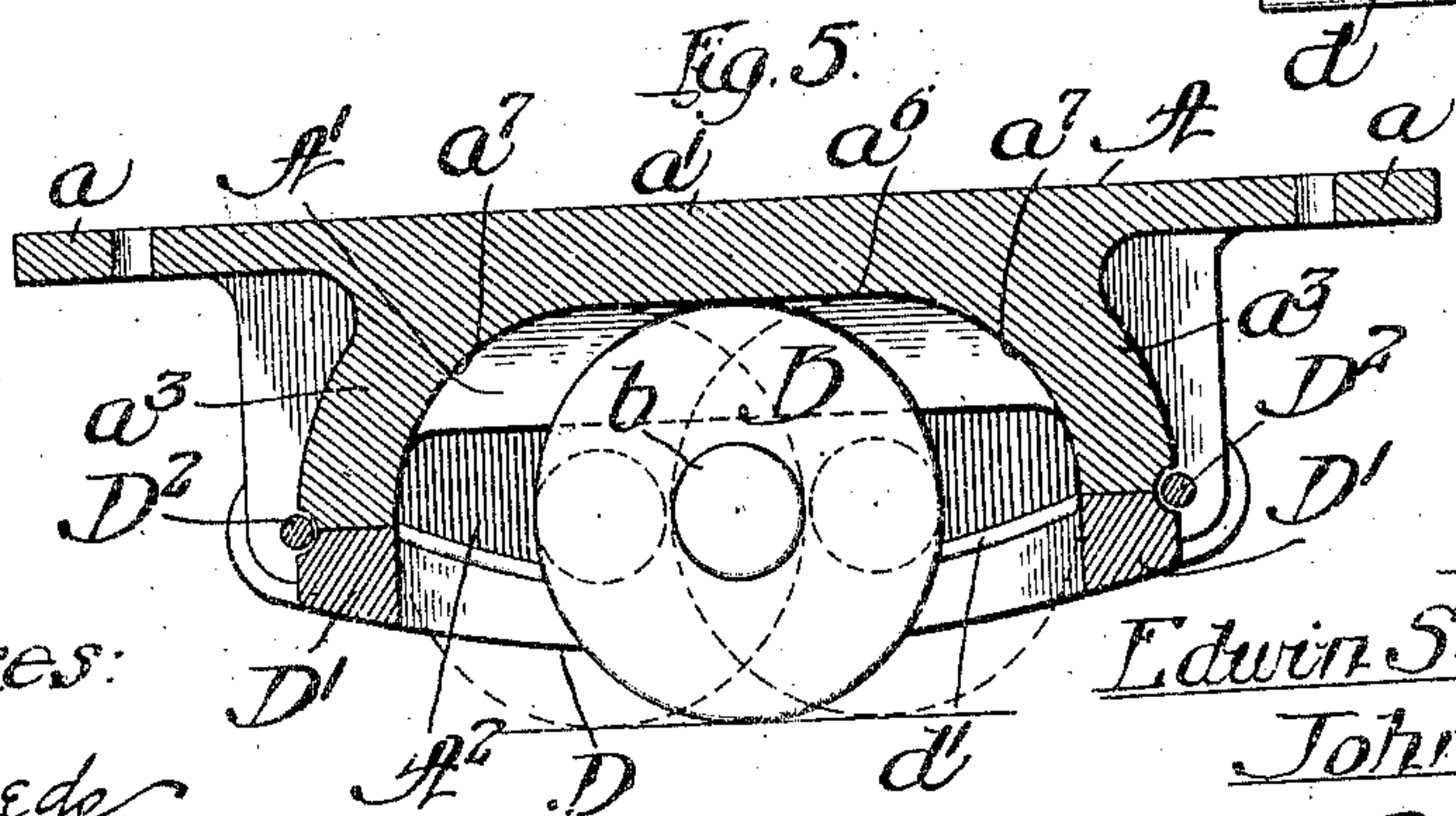
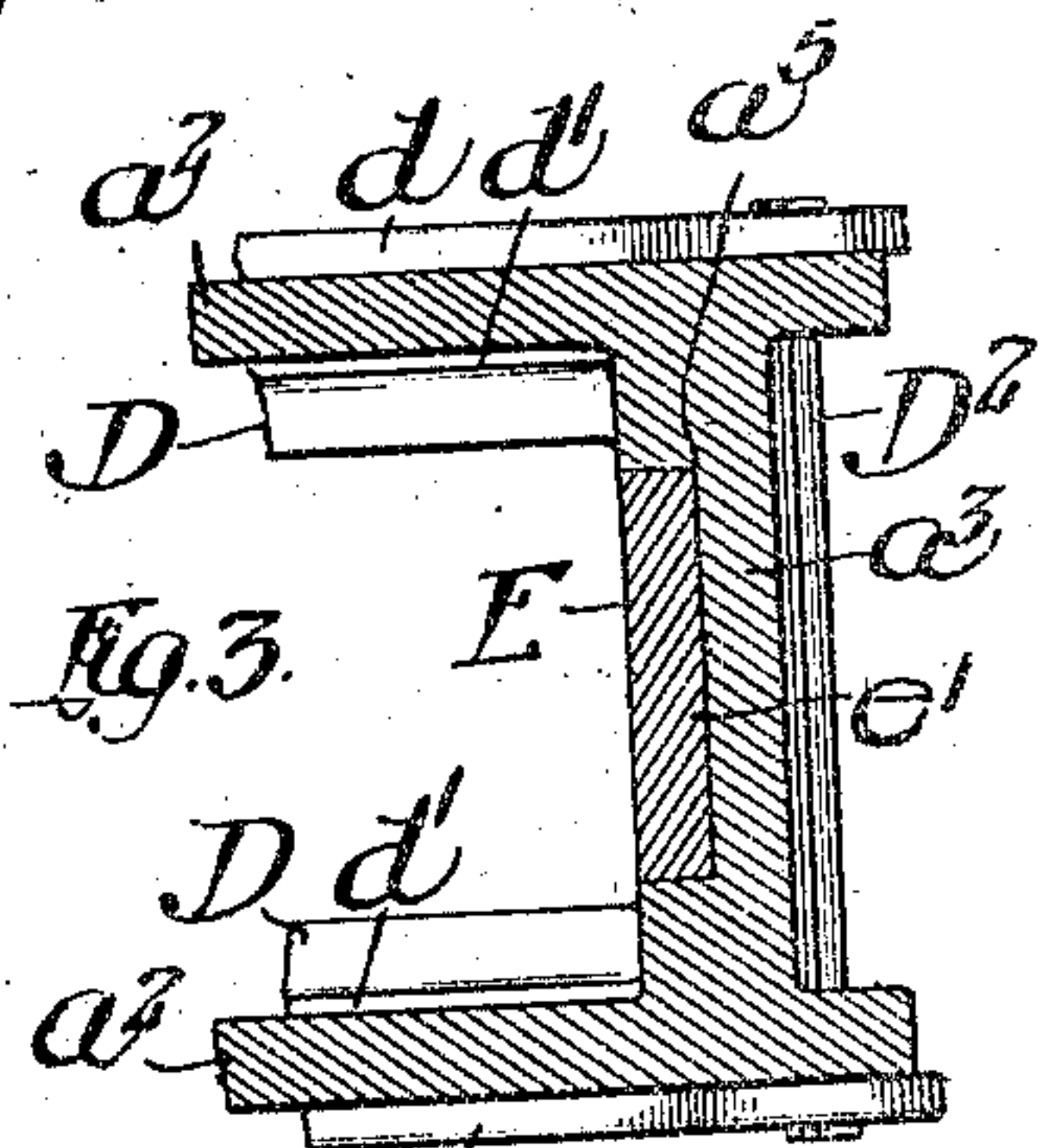
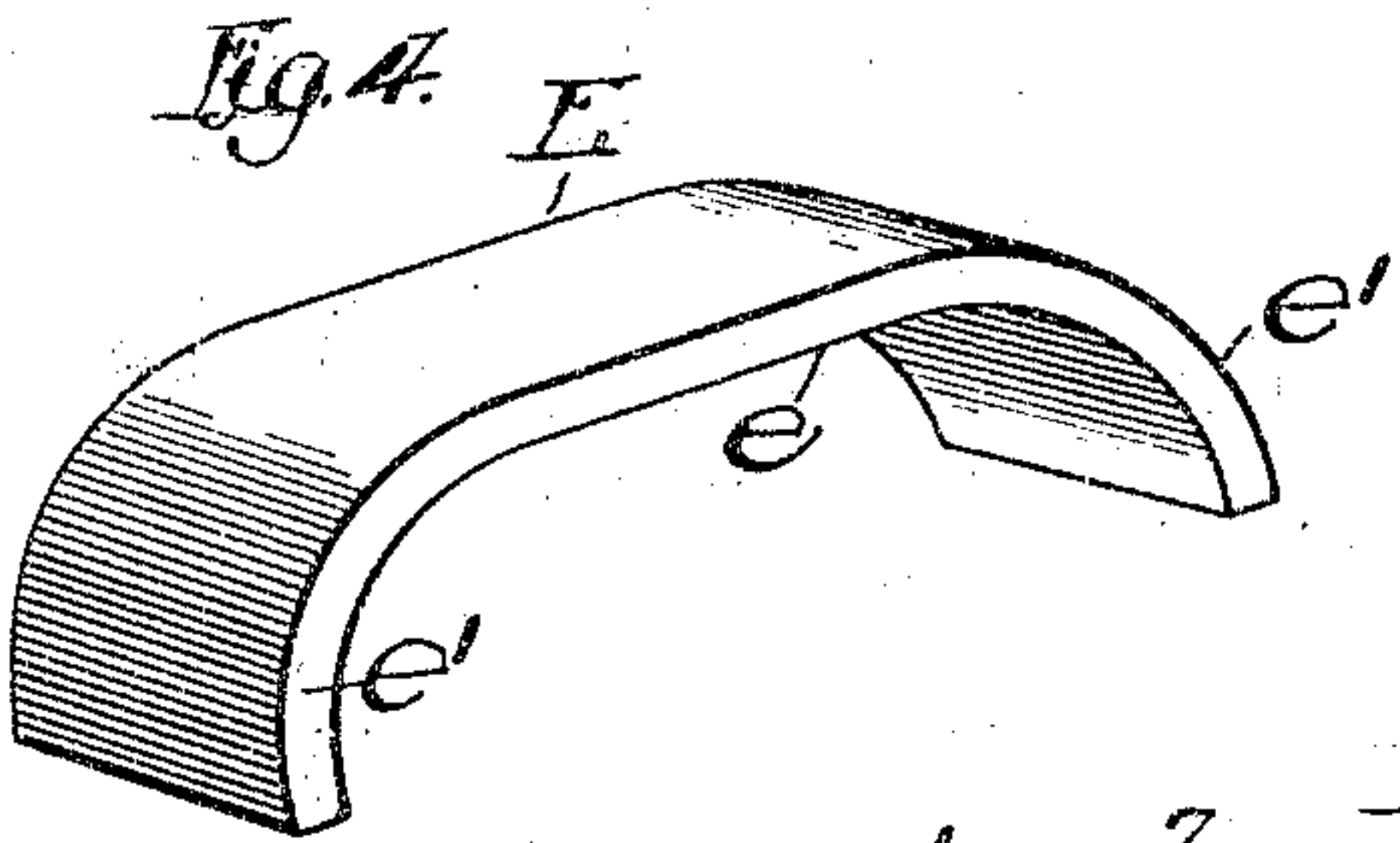
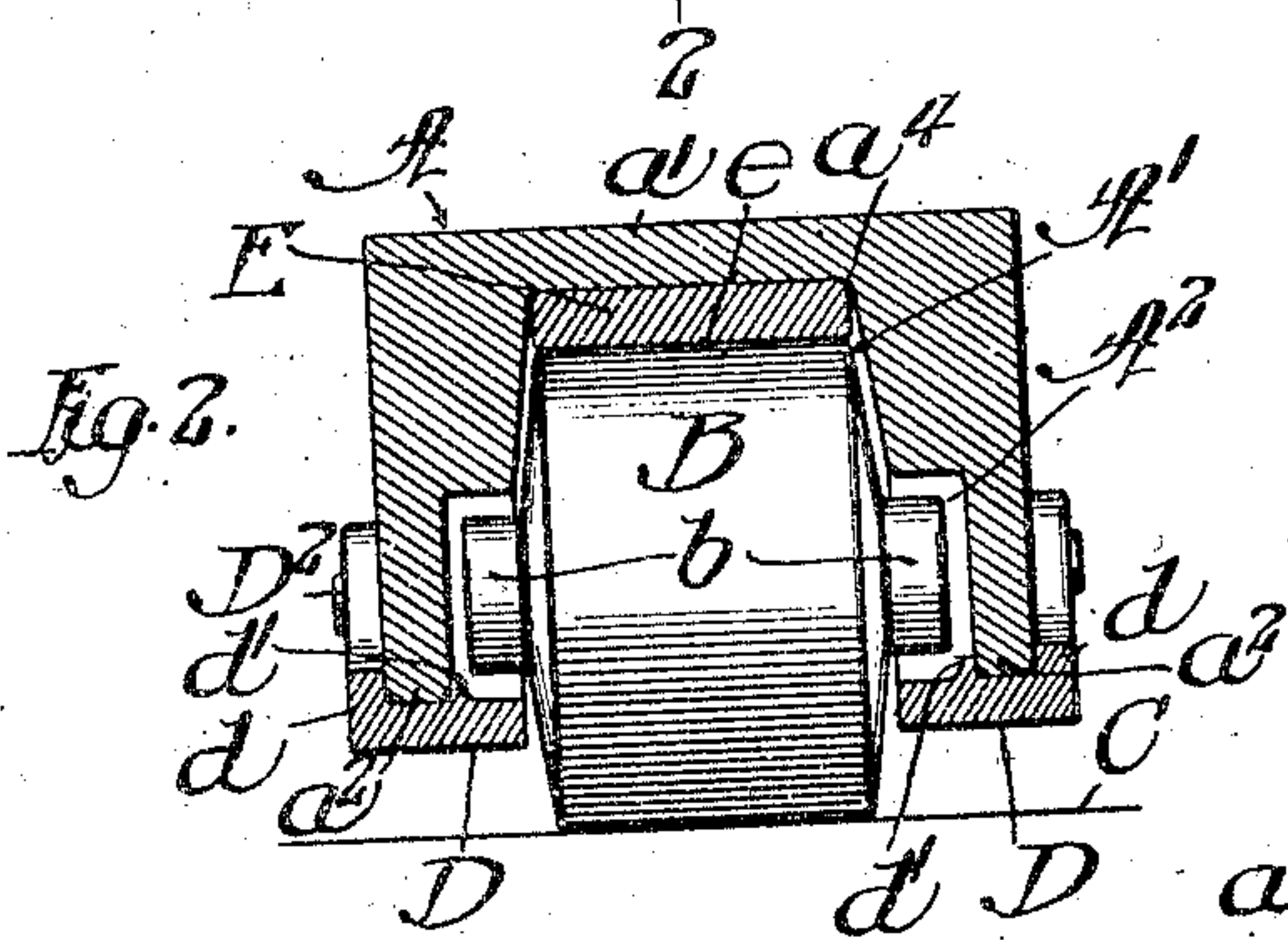
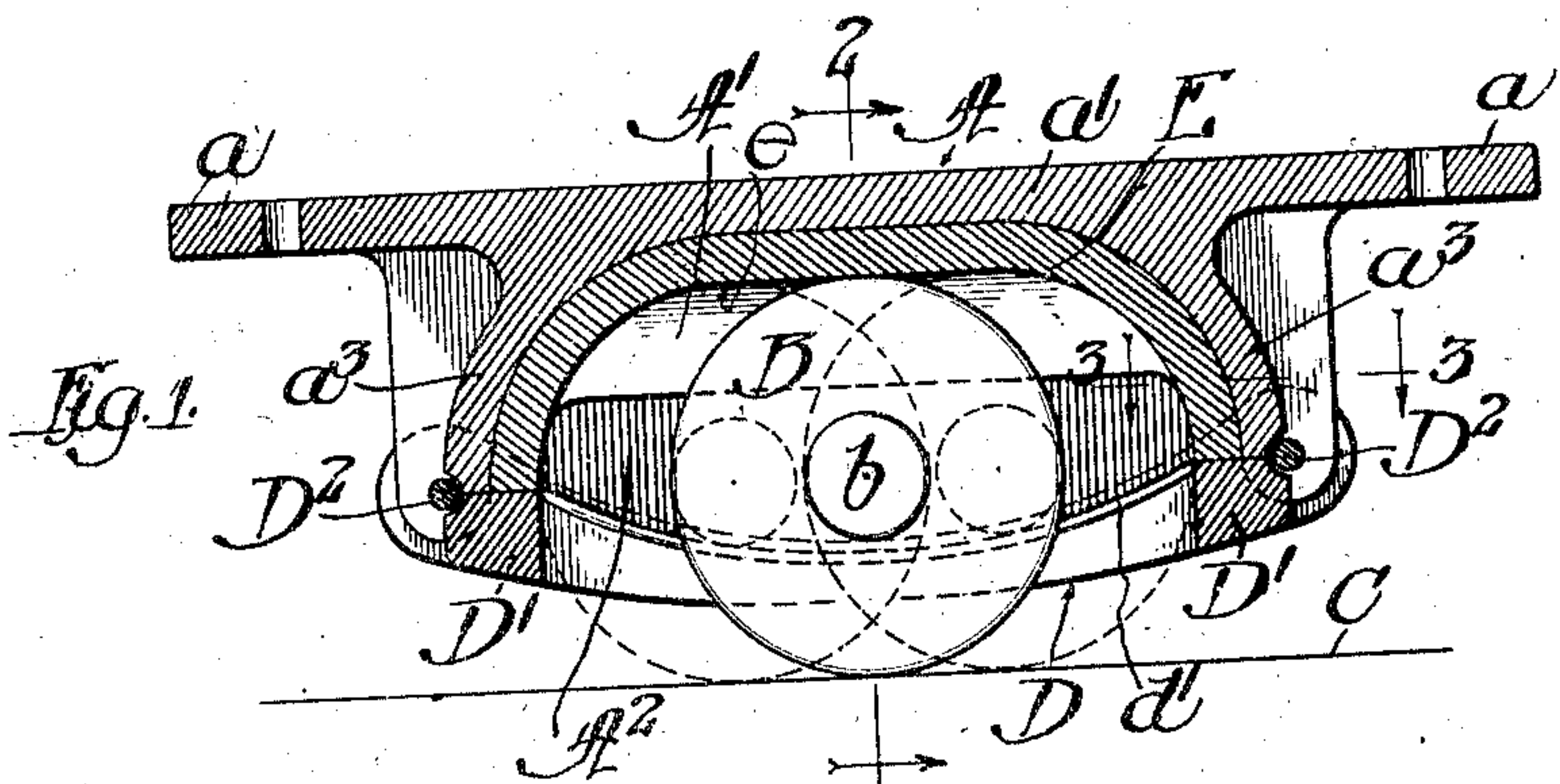


No. 859,475.

PATENTED JULY 9, 1907

E. S. WOODS & J. JACOB.
ROLLER BEARING FOR RAILWAY CARS.
APPLICATION FILED AUG. 4, 1906.



Witnesses:

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Washall

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Edwin S. Woods

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UNITED STATES PATENT OFFICE.

EDWIN S. WOODS AND JOHN JACOB, OF CHICAGO, ILLINOIS.

ROLLER-BEARING FOR RAILWAY-CARS.

No. 859,475.

Specification of Letters Patent.

Patented July 9, 1907.

Application filed August 4, 1906. Serial No. 329,233.

To all whom it may concern:

Re it known that we, EDWIN S. WOODS and JOHN JACOB, citizens of the United States, and residents of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Roller-Bearings; and we 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.

This invention relates to improvements in roller bearings for railway cars and is herein shown as embodied in a roller side bearing of the general type shown in the prior patent to Woods, No. 809,599, dated January 9th, 1906, and which is designed 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.

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

Among the objects of our invention is to lighten the weight of such bearings, while maintaining efficient strength and durability; to reduce the cost thereof, and reduce the height over all of that portion of the bearing which is attached to the car bolster.

Another object of the invention is to provide an improved bearing surface for the roller in the upper bearing member which is formed on a part that is removably seated therein, thereby providing for readily interchangeable bearing surfaces and whereby also the general construction of the casing may be varied as compared to a construction wherein the bearing is formed on an integral part of the casing.

A still further object of the invention is to improve the construction of the casing for the upper bearing member, by which the travel of the roller is stopped at the end of its traverse at either side of the casing.

In the drawings:—Figure 1 is a longitudinal section of the upper bearing member of a side bearing to which our invention is applied. Fig. 2 is a cross-section thereof, on line 2—2 of Fig. 1. Fig. 3 is a fragmentary section, taken on line 3—3 of Fig. 1. Fig. 4 is a perspective view of the hard metal wear-plate, removed from the upper casing. Fig. 5 is a longitudinal section of the upper bearing member, showing a modified arrangement of the curved end stop for the roller.

The upper bearing member to which our improvements are applied and designated as a whole by A, comprises a cast-metal casing having apertured lugs a by which it is attached to the car bolster, and formed to provide a downwardly opening, longitudinally dis-

posed, roller chamber A^1 to receive one or more rollers B, adapted for rolling contact with the downwardly facing bearing surface of said casing, and projects through the lower open side of the chamber for contact with the lower bearing, indicated by the line C. The said casing comprises a top wall a^1 , side walls a^2 , and end walls a^3 which are integral and inclose said roller chamber A^1 . The said side walls are formed to provide on their inner faces elongated channels or recesses A^2 which receive the trunnions or end bearings b of the roller B. The bottoms of said channels constitute tracks that support the roller B through the medium of said trunnions when the roller is out of engagement with its bearing surfaces. In the present construction the tracks upon which said roller trunnions are supported comprise continuous bars D D connected at their ends by transverse members D^1 , the whole constituting a separable part or member of said shell like the construction shown in the prior application of John Jacob, filed on the 5th day of July, 1906, Serial Number 324,847. Said lower track frame is detachably connected with the upper part of said bearing member by means of pins D^2 extending transversely through overlapping lugs on the upper and lower members of said bearing. Either of said pins may constitute a hinge-pin and the other a fastening pin.

In accordance with one feature of our invention, the downwardly facing bearing surface of the casing which the roller engages is formed on a removable hard metal plate E that is fitted to the top and end walls of said casing. The groove a^4 which receives the horizontal portion e of said wear-plate E has, in the present instance, inclined walls which are formed to correspond with the general conically shaped ends of the roller, while the grooved portions a^5 of the end walls which receive the end portions of said wear plate are so formed that the said end portions fit snugly therein as shown in Fig. 3. In the present instance, the end portions of said wear-plate are formed to constitute cylindrically curved stops to engage the periphery of the roller to arrest the travel thereof at each end of the casing. In the construction illustrated the terminals of the curved portions of the wear-plate engage in abutting relation the transverse members D^1 of the lower track member of the bearing, whereby said plate is removably held in place without the necessity of additional fastening means. The employment of the removable hard-metal wearing plate constructed as described enables the upper bearing member as a whole, to be material, lightened, as compared to a construction wherein the upper bearing surface is formed on an integral part of the cas-

ing, inasmuch as the casing may be made of a tough, relatively light metal and the wear-plate of steel or like durable wearing metal. The casing may be also materially reduced in weight and in height over all, both of which are important considerations in the use of devices of this character. Moreover, the arrangement of the wearing plate combined, as herein shown, with a removable lower track member, enables the said wearing plate to be readily inserted into and removed from the casing, and the plate is held firmly in place without the necessity of using additional fastening devices. As before stated, the ends of the wearing plate E are curved complementally to the periphery of the roller and are so located with respect to the limits of travel of the roller as to constitute curved end stops for the roller, and thus relieve the roller trunnions of the work of arresting the travel of the roller in the casing.

A further feature of our invention, embodied in the construction shown, consists in forming the curved surfaces constituting the end stops continuous with the downwardly facing surface of said plate which is engaged by the roller. As herein shown, the curvature of the end stops merge into the downwardly facing bearing surface of the plate E substantially in the planes of the axis of the roller when arrested at one end or the other of its travel. This arrangement possesses practical advantages of importance for reasons among which may be mentioned the following: The said top bearing surfaces of the upper bearing member and the curved end stop are continuous with each other so that there are no projections on either of the parts on which said bearing surfaces or stops are formed against which the roller may be thrown with the result of a tendency to break such projections or mar the periphery of the roller. Again the arrangement of connecting the parts on which said straight and curved surfaces are formed in the manner described has the advantage of greatly strengthening the bearing at the ends thereof. It will be observed that this feature of our invention is especially applicable to a closed top bearing or wherein the top wall of the shell or casing is made integral with the side and end walls thereof.

As shown in Fig. 5 the feature of the curved end stop surfaces formed continuous with the upper straight bearing surface, may be applied to a cast bearing wherein said surfaces are formed on integral parts of said top and end wall, instead of upon a removable bearing plate as described. As shown in said figure, the upper bearing a^6 constitutes the lower face of the upper wall of the casing, and the curved stops a^7 a^7 at the ends of the casing are formed on the end walls a^3 a^3 which are integral with the top walls a^1 , the said top and end walls, in this instance, being made of greater strength than those shown in the prior construction. The advantages of continuity of surface and strength of the casing obtains in this form of bearing as it does in the same general manner in the bearing previously described.

As a means of holding the lower track member against lateral stress, the said track members D are provided with outer and inner parallel flanges d d' , forming between the same grooves in which fit the lower margins of the side wall of the casing, as more clearly

shown in Figs. 2 and 3. This construction constitutes a double lock and contributes to the strength and durability of the casing as a whole.

Our invention, while illustrated as embodied in a roller side bearing for railway cars, may obviously be employed in other relations where the construction described in the claims are applicable. For instance, the essential features of the bearing may be applied to the bearing at the center plate of a car truck between the truck and body bolster. Moreover the casing and roller herein shown may constitute the lower member of the bearing arranged to present the roller to a downwardly facing bearing surface. Specific terms employed herein as indicating the upper and lower parts of the bearing are to be regarded as terms of description, therefore, and not terms of limitation.

The manner of connecting the track member of the bearing casing with the chamber member thereof is not herein claimed *per se*, this construction being made the subject matter of a prior application filed by John Jacob, July 5, 1906, Serial No. 324,847.

We claim as our invention:—

1. In a roller bearing for railway cars, a casing formed to provide an elongated, downwardly opening roller chamber provided at its top with a downwardly facing horizontal bearing surface, a roller in said chamber provided with end bearings, tracks on the side walls of the casing on which the end bearings of the roller rest and roll, the end walls of the casing being curved complementally to the cylindric surface of the roller and serving as stop surfaces to arrest the travel of the roller, said curved stop surfaces being continuous with and formed on the same part as the horizontal downwardly facing bearing surface, the roller having free rolling movement endwise of the casing and vertical movement relatively to the tracks.
2. A roller bearing for railway cars and the like, comprising a casing formed to provide an elongated, downwardly opening roller chamber, a roller therein provided with end bearings, tracks on the side walls of the casing on which said end bearings rest and roll, said roller having free rolling movement endwise of the casing and vertical movement relatively to the tracks, and a wear-plate in said chamber provided with a flat horizontal, downwardly facing bearing surface for engagement with the roller, and curved downwardly at its ends to constitute stops to arrest the travel of the roller in either direction.
3. A roller bearing for railway cars and the like, comprising a casing formed to provide an elongated, downwardly opening roller chamber, a roller therein having end trunnions, tracks made separate from and removably secured to the casing, on which said roller trunnions rest and roll, said roller having free rolling movement endwise of the casing and vertical movement relatively to the tracks, and a removable wear plate in said roller chamber held in place by the removable track member.
4. A roller bearing for railway cars and the like, comprising a casing formed to provide an elongated, downwardly opening roller chamber, a roller therein provided with end bearings, tracks made separate from and removably secured to the casing on which said end bearings rest and roll, said roller having free rolling movement endwise of the casing and vertical movement relatively to the tracks, and a wear plate in said chamber provided with a horizontal downwardly facing bearing surface for engagement with the roller and curved downwardly at its ends to constitute stops to arrest the travel of the roller in either direction, the lower ends of said curved portions of the wear plate engaging the removable track structure whereby said wear plate is held in place.
5. A roller bearing for railway cars and the like, comprising a casing made of separable upper and lower members, the upper member being formed to provide an elongated, downwardly opening roller chamber, a roller therein provided with end bearings, tracks on the side walls of the casing on which the end bearings of the roller rest and roll, the end walls of the casing being curved complementally to the cylindric surface of the roller and serving as stop surfaces to arrest the travel of the roller, said curved stop surfaces being continuous with and formed on the same part as the horizontal downwardly facing bearing surface, the roller having free rolling movement endwise of the casing and vertical movement relatively to the tracks, and a wear-plate in said chamber provided with a flat horizontal, downwardly facing bearing surface for engagement with the roller, and curved downwardly at its ends to constitute stops to arrest the travel of the roller in either direction.

gated, downwardly opening roller chamber, a roller in
said chamber provided with end trunnions, said lower
member being constructed to form parallel tracks on
which the trunnions of the roller rest and roll and the
5 roller having free rolling movement endwise of the casing
and vertical movement relatively to the tracks, said tracks
being provided with inner and outer flanges between which
the lower margins of the side walls of the casing fit to
hold the lower member laterally stable.

In testimony, that we claim the foregoing as our inven- 10
tion we affix our signatures in the presence of two wit-
nesses, this 31st day of July A. D. 1906.

EDWIN S. WOODS.
JOHN JACOB.

Witnesses:

W. L. HALL,

GEORGE R. WILKINS.