E. S. WOODS.

ANTIFRICTION BEARING.

APPLICATION FILED SEPT. 15, 1909.

1,016,596.

Patented Feb. 6, 1912.

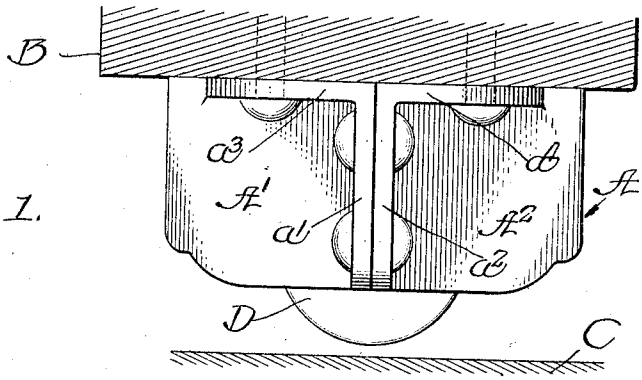

Fig. 1.

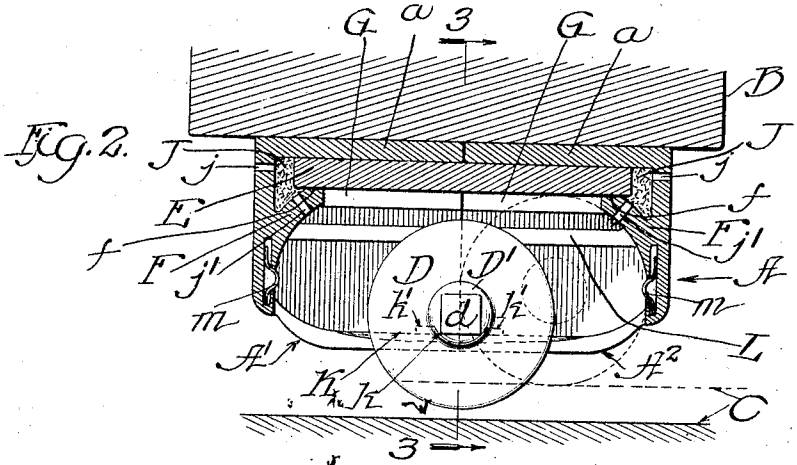

Fig. 2.

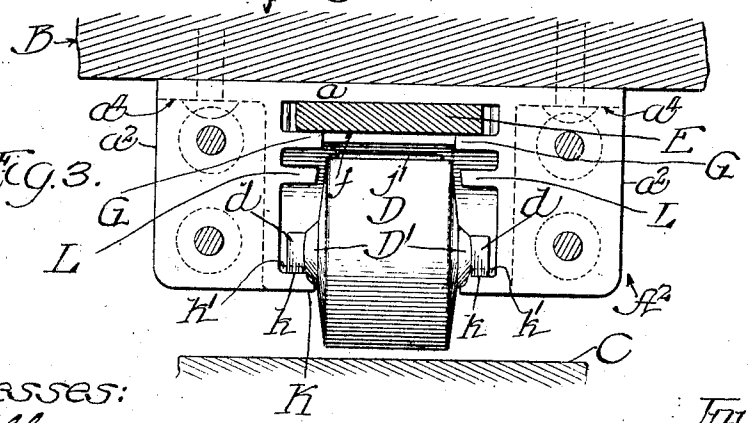

Fig. 3.

Witnesses:
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UNITED STATES PATENT OFFICE.

EDWIN S. WOODS, OF CHICAGO, ILLINOIS.

ANTIFRICTION-BEARING.

1,016,596. Specification of Letters Patent. Patented Feb. 6, 1912.

Application filed September 15, 1909. Serial No. 517,800.

To all whom it may concern:

Be it known that I, EDWIN S. WOODS, 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 Antifriction-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.

This invention relates to an improvement in antifriction side bearings for railway cars and in general to that type which consists of a casing attached to the car body or bolster with a roller supported in the casing in such a way as to have free play up and down within certain limits.

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

In the drawings:—Figure 1 is a side elevation of my improved side bearing, illustrated as attached to a car bolster shown in section. Fig. 2 is a longitudinal section of Fig. 1 showing the antifriction member in side elevation. Fig. 3 is a transverse vertical section through Fig. 2, on the line 3—3 thereof.

A represents the supporting casing or the carrier attached to the car bolster B; C is the lower bearing member located on the truck in the usual manner; D, the antifriction member rotatably mounted in the casing or carrier A, and having vertical movement therein; and E, the upper bearing member supported in the casing or carrier. The casing is made in two sections, A^1 A^2, preferably dividing the casing along a transverse medial plane, and each provided with laterally extending, vertical, abutting lugs a^1 a^2 by means of which the two sections are secured together. Said sections have top, side and end walls and are provided with lugs or flange extensions a^3 a^4 of their top walls a a, by means of which they are attached to the car bolster.

F F indicate transverse, curved webs formed integrally with the ends of the casing sections A^1 A^2, said webs projecting upwardly to form shoulders f f upon which rest the upper bearing member or wear-plate E. Said shoulders are connected with laterally extending shoulders G G formed on the side walls of the chamber sections, which shoulders underlie and bear against the side margins of the wear-plate E. The said wear-plate is thus confined between the shoulders f f and the shoulders G G on its lower side and the top plates a a of the chambers sections A^1 A^2, and thus serves the double function of a bearing member, and as a bracing member for the suspension casing.

The wear-plate E terminates at its ends short of the end walls of the casing, leaving spaces or chambers J J located above the curved webs F F, which chambers are filled with waste soaked with oil. j j indicate oil holes for the admission of oil to said chambers and j^1 j^1, oil channels through which oil may pass to the inner faces of the end walls of the chamber.

K K indicate tracks formed integrally with the side walls of the chamber at their lower inner margins which are adapted to support the antifriction member when not in contact with the upper and lower bearing surfaces. The upper surfaces of these tracks are substantially horizontal but their inner edges slightly diverge toward the center as indicated at k. The antifriction member D consists of a roller provided with trunnions D^1. Said trunnions are conical in form but terminate with centrally disposed, square lugs which are adapted, when the roller approaches its central position, to engage the flat top surfaces of the tracks K. It is apparent that when the conical trunnions bear upon the divergent rail k that the antifriction member will be caused to roll toward the center of the chamber A as and in the manner described in Letters Patent No. 912,519, granted on the 16th day of February, 1909. The length of the conical part of the trunnions and the divergence of the tracks k are so proportioned relatively to each other that when the antifriction member D reaches the center or about the center of the chamber, one of the square sides of the lugs d comes to bear on the flat upper surface of the rails K and the roller is thus brought to rest.

k^1 k^1 indicate lugs located on the top of the tracks K on opposite sides of the center thereof for the purpose of preventing the roller trunnions from being jarred from the center upon the sudden stopping of the cars as, for example, when the brakes are set. Said movement of the roller is also prevented by the square lugs at the ends of the

trunnions which prevent the roller from turning on its trunnions when in a central position. The means above referred to for retarding the movement of the antifriction member at the center or other predetermined point is an improvement upon the specific mechanism for the same purpose shown and described in an application filed by me on January 6th, 1909, Serial Number 470,982.

At the opposite ends of the chamber A are located springs *m* which are suitably located and mounted in the end walls of the casing. Said springs are adapted to be struck by the periphery of the roller at the end of its travel in the casing and become compressed, thus forcing said rollers upon their release by the bearing members to travel away from the ends of the chamber and to thus initially start them on their travel back to the centers of their tracks. Such springs are to prevent any possibility of the rollers becoming stuck or wedged in their positions at the opposite ends of the chamber.

By the arrangement of the oil chambers J J and the oil channels j^1, lubricant is supplied to the end walls of the chamber A to facilitate the rotation of the roller in engagement with said end walls and to obviate the noisy, grinding sound which is apt to occur when the rollers reach the end of their movement in the chamber. It also tends to eliminate the friction between the periphery of the roller and the end walls of the chamber as well as the wear-plate E when the roller turns against their surfaces as it is apt to do when it reaches the limit of its longitudinal travel.

It is to be noted that by reason of the location of the wear-plate E, held in contact with the underside of the tops of the casing section A^1 A^2 by means of the lugs G and *f*, the chamber or casing is strengthened, the said wear-plate underlying the joint at the abutting edges of said top plates.

L, L indicate inwardly extending lugs located below the lugs G and formed integrally with the side walls of the suspension chamber sections A^1, A^2. Said lugs form the upper walls of continuous channels in which the roller trunnions travel and also serve to keep the roller in upright position.

It is apparent that the various details of construction and arrangement illustrated and described may be variously modified without departing from the spirit of my invention and I do not wish to be limited to them in any way except as pointed out in the appended claims.

I claim as my invention:—

1. In an antifriction bearing, in combination with an antifriction member, a suspension chamber comprising sections dividing said chamber transversely, said sections having inclosing top walls and being provided with laterally extending, vertical abutting lugs with means for securing said lugs together, inwardly extending lugs formed on the inner walls of said chamber sections, and a bearing member located and upheld between said lugs and the tops of said chamber sections.

2. In an antifriction bearing, in combination with an antifriction member, a suspension chamber comprising sections dividing said chamber transversely, said sections having inclosing top walls, inwardly extending lugs formed on the inner walls of said chamber sections, and a bearing member located and upheld between said lugs and the tops of said chamber sections.

3. In an antifriction bearing, in combination with an antifriction member, a suspension chamber comprising sections dividing said chamber transversely, said sections having inclosing top walls, a bearing member underlying said top walls, and lugs located within said chamber adapted to engage the sides and ends of said bearing member to retain it in place.

4. In an antifriction bearing, in combination with an antifriction member, a suspension chamber comprising sections dividing said chamber transversely, said sections having inclosing top walls, a bearing member underlying said top walls, and means for supporting said bearing member in place.

5. In an antifriction bearing, the combination with an antifriction member, a suspension chamber for said antifriction member provided with curved walls, a bearing plate located above said antifriction member, and oil storage chambers located at the ends of said suspension chamber.

6. In an antifriction bearing, the combination with an antifriction member provided with curved end walls, a bearing plate located above said antifriction member, and oil storage chambers located at the ends of said suspension chamber above said antifriction member.

7. In an antifriction bearing, in combination with a suspension chamber provided with tracks, an antifriction member provided with trunnions adapted to roll on said tracks, and lugs located on said tracks intermediate the ends of said tracks.

8. In an antifriction bearing in combination with a suspension chamber provided with divergent tracks, a roller provided with conical trunnions, said trunnions terminating in polygonal lugs, said divergent tracks and trunnions being arranged to bring the lugs at the ends of said trunnions to bear on said tracks in the neighborhood of a predetermined point.

9. In an antifriction bearing in combination with a suspension chamber provided with divergent tracks, a roller provided with conical trunnions, said trunnions terminat-

ing in lugs having a flat side, said divergent tracks and trunnions being arranged to bring the lugs at the ends of said trunnions to bear on the top of said tracks in the neighborhood of a predetermined point.

10. In an antifriction bearing, in combination with a suspension chamber provided with tracks, an antifriction element provided with trunnions adapted to roll on said tracks, said trunnions terminating in polygonal lugs, said tracks and trunnions being adapted to bring the antifriction element to a predetermined position, and said polygonal lugs being arranged to retard the roller in said predetermined position.

11. In an antifriction bearing, in combination with a suspension chamber provided with tracks, an antifriction element provided with trunnions adapted to roll on said tracks, said trunnions terminating in lugs having a flat side, said tracks and trunnions being adapted to bring the antifriction element to a predetermined position, and said lugs being arranged to retard the roller in said predetermined position.

12. In an antifriction bearing, in combination with a suspension chamber, an antifriction element carried thereby, said antifriction element being provided with conical trunnions terminating in polygonal lugs as and for the purpose described.

13. In an antifriction bearing, in combination with a suspension chamber, an antifriction element carried thereby, said antifriction element being provided with trunnions terminating in polygonal lugs as and for the purpose described.

14. In an antifriction bearing, in combination with a suspension chamber, an antifriction element carried thereby, and resilient means located at the ends of said chamber adapted to be engaged by the antifriction element at the limits of its path of travel only.

In testimony that I claim the foregoing as my invention I affix my signature in the presence of two witnesses, this 13th day of September A. D. 1909.

EDWIN S. WOODS.

Witnesses:

CLARENCE E. MEHLHOPE,

GUY M. CAMPBELL.