

G. F. RENDALL.
CAR WHEEL AXLE AND BEARING.
APPLICATION FILED MAY 21, 1907.

944,463.

Patented Dec. 28, 1909.

Fig. 1.

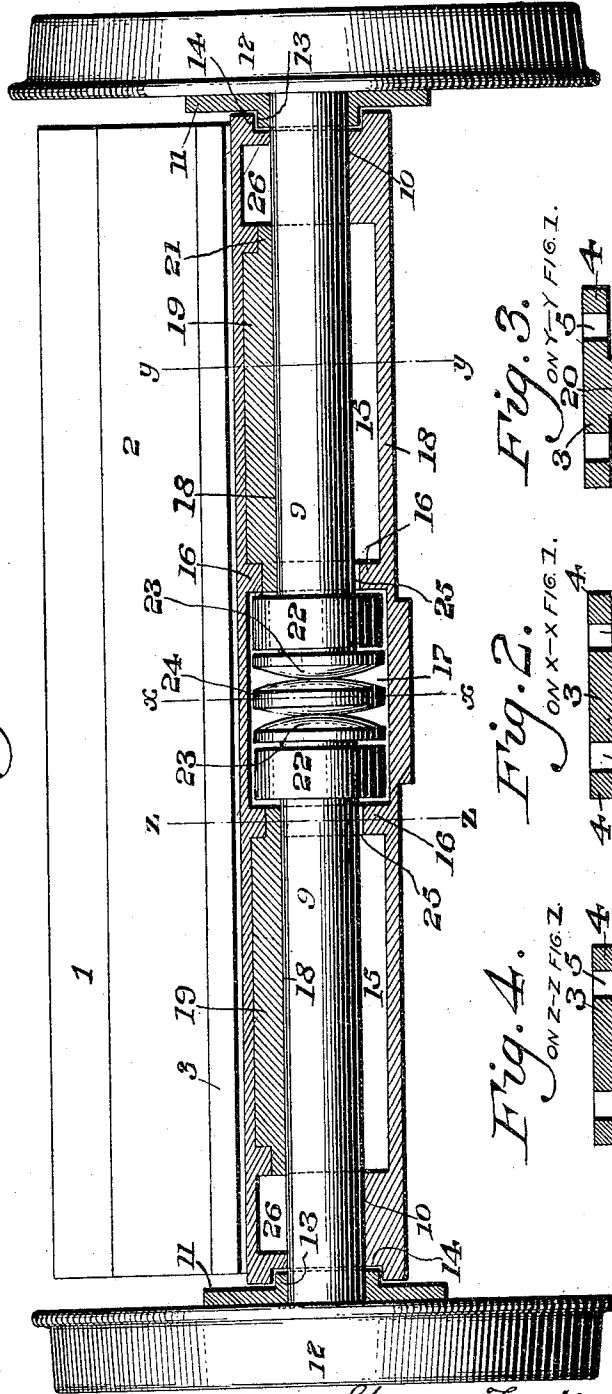


Fig. 3.

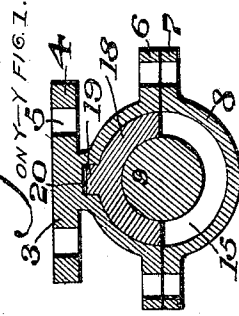


Fig. 2.

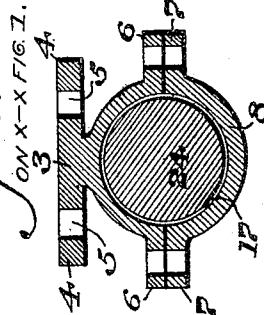
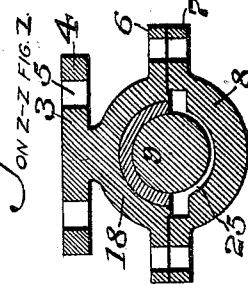


Fig. 4.



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GEORGE F. RENDALL, OF NEW YORK, N. Y.

CAR-WHEEL AXLE AND BEARING.

944,463.

Specification of Letters Patent. Patented Dec. 28, 1909.

Application filed May 21, 1907. Serial No. 374,835.

To all whom it may concern:

Be it known that I, GEORGE FREDERICK RENDALL, a subject of the King of Great Britain, residing in the city and county of New York, State of New York, have invented a new and useful Car-Wheel Axle and Bearing, of which the following is a specification.

My present invention consists of a novel construction of sectional axle and a novel construction of bearing therefor, whereby the wheels carried by different sections may rotate at different rates of speed and adjust themselves to curves in the construction of the roadbed.

It further consists of a novel construction of a bearing in which the axle is mounted, which is adapted to contain a suitable lubricating material, in which the axle can rotate without the lubricating material working out of the bearing.

It further consists of a novel construction of a bearing and sectional axles in which the inner end of each section is provided with a ball or disk and with these balls or disks, an independent ball or disk is adapted to co-act.

It further consists of a novel construction of a bearing and sectional axle in which the wheels carried by different sections are permitted to rotate at different rates of speed and in which the strength and rigidity of the concrete unitary structure is not materially affected.

It further consists of other novel features of construction, all as will be hereinafter fully set forth.

For the purpose of illustrating my invention, I have shown, in the accompanying drawings, one form thereof, since this embodiment will give satisfactory and reliable results in practice, although it is to be understood that the various instrumentalities of which my invention consists can be variously arranged and organized and that my invention is not limited to the precise arrangement and organization of these instrumentalities as herein set forth.

Figure 1 represents a sectional view of a car wheel axle and bearing embodying my invention. Fig. 2 represents a section on line $x-x$, Fig. 1. Fig. 3 represents a section on line $y-y$, Fig. 1. Fig. 4 represents a section on line $z-z$, Fig. 1.

Similar numerals of reference indicate corresponding parts in the figures.

Referring to the drawings:—1 designates the floor of the car or a spring frame of any usual or conventional construction to which the bar 2 is secured in any suitable manner.

3 designates a box or casing having flanges 4 extending therefrom which are provided with apertures 5, whereby said box may be rigidly secured by means of any suitable fastening devices to the bar 2.

The box or bearing, in the present instance, is composed of sections, the upper box having apertured flanges 6 extending therefrom adapting the same to be secured to the apertured flanges 7 of the lower section 8 of the box or bearing. In this bearing, the shaft 9 is adapted to rotate, it being noted that the bearing 10 is formed at each end of the box.

11 designates a collar or washer secured to the shaft 9 or to the car wheel 12 which is fixedly mounted on the shaft 9, said collar or washer having a flange 13 extending therefrom which extends into the recess 14 in the ends of the box but does not come into contact with the main bearing, but serves the purpose of preventing the escape of the lubricant from the chambers 15 formed by the bearings 10 and the internal flange 16, said flange 16 forming when the parts are in assembled position, an internal chamber 17 into which the ends of the shaft 9 extend.

18 designates a bearing block provided with a flange or projection 19 which engages a slot or recess 20 in the upper portion of the bearing 3, it being understood as most clearly shown in Figs. 3 and 4 that this bearing comprises the semi-cylindrical bearing member with which the shaft 9 coacts to support the weight of the car. In the present instance the outer ends of the bearing block 18 are provided with collars 21 which, when the parts are assembled, are located intermediately of the depending flange or ring 16 and the shaft 9, as will be readily apparent by reference to Fig. 1.

22 designates a collar or counter-poise mounted near the inner ends of the shaft 9 and within the box 17.

23 designates a ball or disk integral with or secured to each shaft 9 between which a ball or disk 24 is located, said central disk

being adapted to engage with the disk carried by each section of the shaft, it being noted that the lubricant contained in the chamber 17 may pass therefrom, through the channel or passage 25 into the chamber 15.

Since I provide a chamber 26 upon the bearing 10, it will be apparent that all the bearing parts of the axle will be suitably lubricated under all conditions.

It will now be apparent that the collars or washers 11 will prevent the escape of the lubricating material from the axle bearing so that the lubricating material will not run out into contact with the wheels 12.

It will be apparent that when the wheels are passing around a curve they may rotate at different speeds, since the axle is formed in sections and a frictional disk such as 24 is interposed between the frictional disks 23 located at the inner end of each section and that all the frictional parts work within a closed oil or grease box and that means are also provided to confine the lubricating material in its proper place.

Owing to the manner in which the upper bearing block 18 is secured with respect to the upper portion of the box 3, it will be apparent that any rotation of said bearing block will be positively prevented.

It will now be apparent from the foregoing that I have devised a novel and useful construction of axle bearing and axle especially adapted to be employed in conjunction with car wheels and which embodies the features of advantage enumerated as desirable in the statement of invention, and while I have, in the present instance, shown and described the preferred embodiment thereof which gives in practice satisfactory and reliable results, it is to be understood that it is susceptible of modification in various particulars without departing from the spirit and scope of the invention or sacrificing any of its advantages.

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

1. In a device of the character described, a sectional axle bearing having a plurality of oil chambers, semi-circular bearing blocks non-rotatably carried by the upper of said sections, a sectional axle engaging said bearing blocks, disks secured to the inner ends of said axles, a counterpoise on each axle in proximity to the disk thereon and located within one of the oil chambers and an independent disk frictionally engaging therewith.

2. In a device of the character described, the combination with an axle bearing having a central oil chamber and an oil chamber on opposite sides thereof and communicating by a port with said central oil chamber, of a semi-circular bearing block non-rotatably mounted in each of said bearing

chambers, an axle section engaging each block and extending into said central chamber, a counterpoise mounted near the inner end of each axle section, a disk at the end of each axle section, and an independent disk frictionally engaging the disks carried by said axle sections.

3. In a device of the character described, the combination with an axle bearing having a central oil chamber and an oil chamber on opposite sides thereof and communicating by a port with said central oil chamber, of a semi-circular bearing block non-rotatably mounted in the upper portion of each of said oil chambers, an axle section engaging each block and extending into said central chamber, collars mounted near the inner end of each axle section, a disk at the end of each axle section, an independent disk frictionally engaging the disks carried by said axle sections, and means including washers mounted on said axle sections for preventing the escape of lubricant from said bearing.

4. In a device of the character described, the combination with a sectional axle bearing having a centrally located oil chamber and an oil chamber on opposite sides of said first chamber, of a bearing block non-rotatably mounted in the upper portion of each of said chambers, lubricating material in said chambers, an axle composed of sections in said chambers, the inner ends of said axle terminating in said central chamber, a disk carried at the inner end of each axle, an independent disk having frictional engagement with said disks, and means for limiting the longitudinal movement of said axle sections.

5. In a device of the character described, the combination with a casing provided with a central oil chamber and end oil chambers, the upper portion of said end chambers having a slot therein, a bearing block having a projection engaging said slot, an axle composed of sections in said end chambers, the inner ends of said axles terminating in said central chamber, a disk carried at the end of each axle and an independent disk having frictional engagement with said disk.

6. In a device of the character described, the combination with a sectional axle bearing having a centrally located oil chamber and an oil chamber on opposite sides of said first chamber, a semi-circular bearing block mounted in each of said chambers and having means thereon adapted to interlock with the upper portion of said axle bearing, an axle composed of sections located in said chambers and engaging said bearing block, the inner ends of said axles terminating within said central chamber, a disk at the end of each axle section and a counterpoise carried by each axle in proximity to the end disk thereon.

7. In a device of the character described, the combination with a casing having flanges at its upper portion adapted to be secured to the car floor, said casing being provided with a centrally located oil chamber, an end oil chamber on opposite sides of the central chamber, said casing having an inwardly extending flange in proximity to said central chamber, a semi-circular bearing block mounted in the upper portion of the end chambers and adapted to interlock therewith, the inner ends of said blocks being reduced and engaging the inner face of said flange, an axle composed of sections and journaled in said casing and engaging said bearing blocks, the inner ends of said axle sections terminating within said central chamber, disks on the ends of said axle sections, an independent disk having frictional engagement with the end disks and said flanges having passages therethrough whereby lubricating material within the chambers may pass from one chamber to the other.

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Witnesses:

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