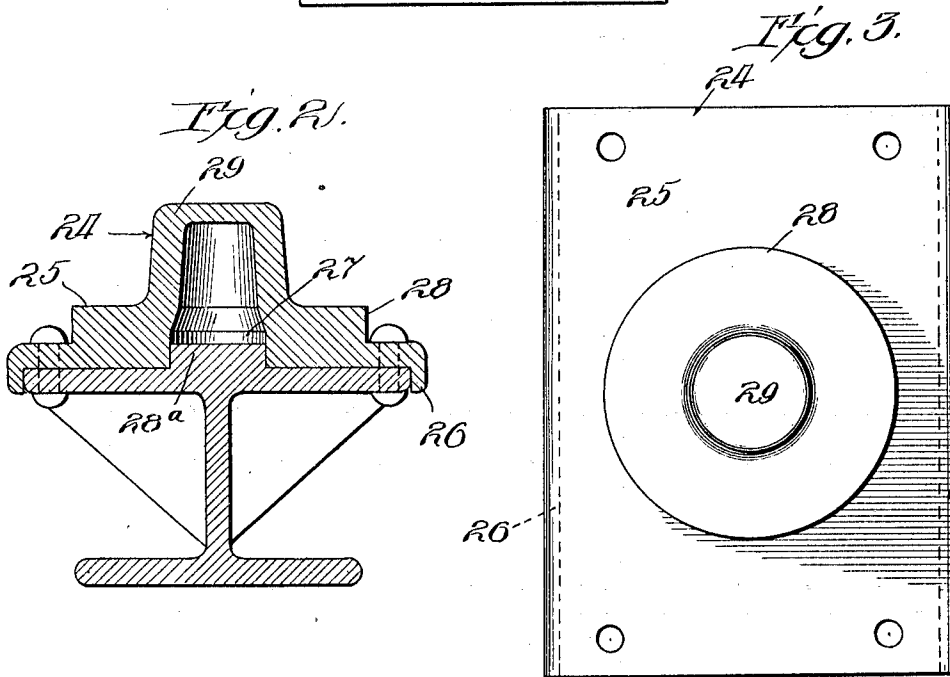
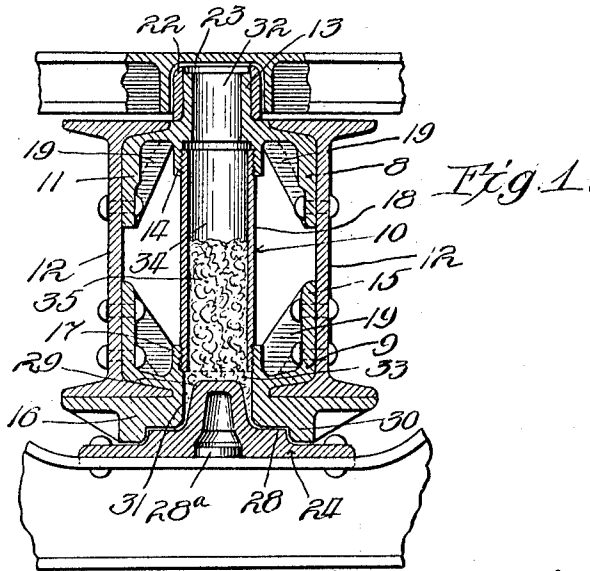


A. L. JACOBS.
 CENTER PIN AND BEARINGS THEREFOR.
 APPLICATION FILED AUG. 26, 1912.

1,053,819.

Patented Feb. 18, 1913.

3 SHEETS-SHEET 1.



Witnesses:
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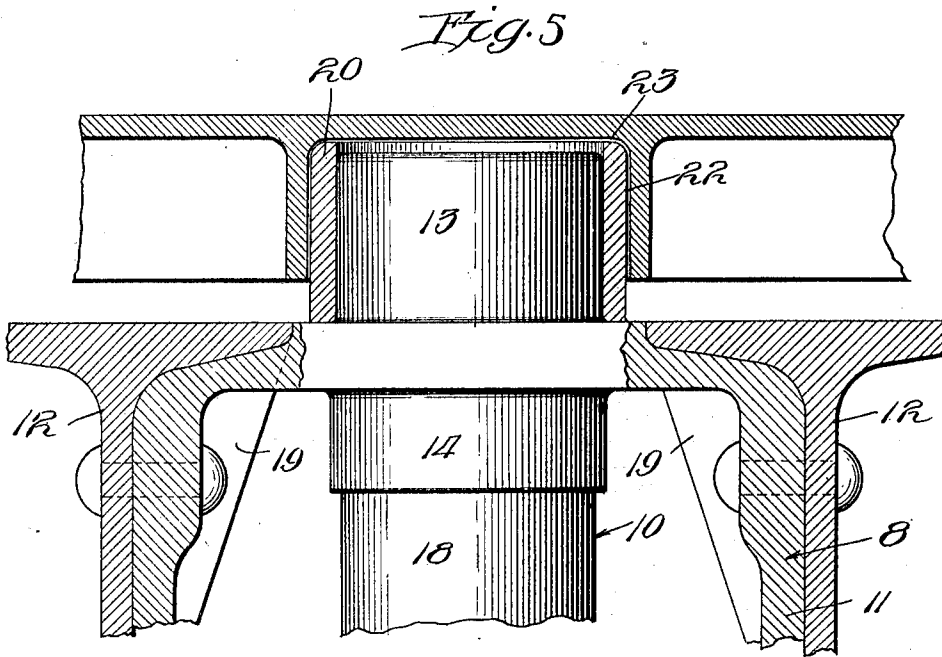
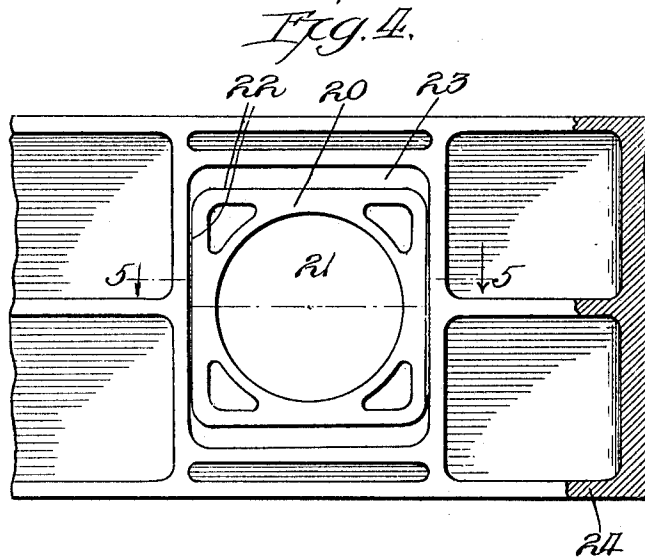
Inventor:
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3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

Fig. 6.

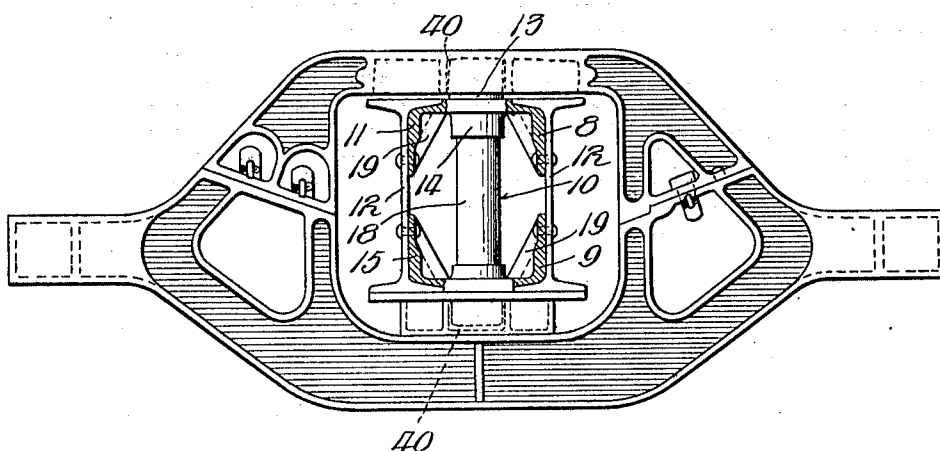
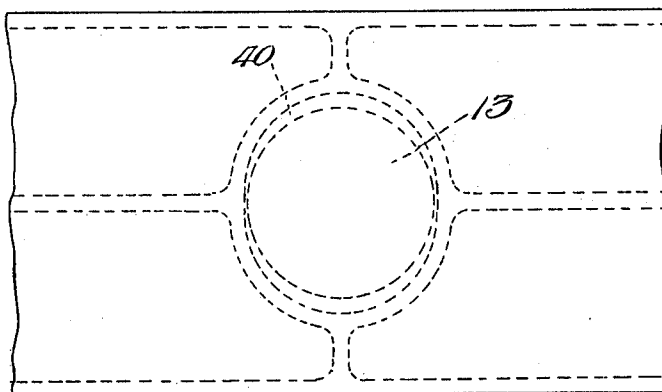


Fig. 7.



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UNITED STATES PATENT OFFICE.

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CENTER PIN AND BEARINGS THEREFOR.

1,053,819.

Specification of Letters Patent.

Patented Feb. 18, 1913.

Application filed August 26, 1912. Serial No. 717,078.

To all whom it may concern:

Be it known that I, ABRAHAM L. JACOBS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Center Pins and Bearings Therefor, of which the following is a specification.

The present invention relates to a portion of a car structure, and deals particularly with the formation and arrangement of the center-pin for the trucks and body, together with the bearings therefor.

The objects of the present invention are to provide a certain amount of play between the center-pin and its bearings, whereby a movement therebetween is permitted longitudinally of the car body, thus relieving the parts of the car structure from any undue strain when the body of the car is lifted from the trucks; to provide a center-pin which will be composed of a plurality of independent elements, thus enabling pins of various sizes to be supplied without carrying in stock a plurality of different patterns and castings; to provide the center-pin with a chamber for receiving suitable lubricating substance, thus maintaining the pin-bearings in a constant state of lubrication; to provide members for properly securing the pin to the body of the car structure; to provide reinforcing members for the fastening means; and to provide a substantial wearing surface between the pin and its bearings, whereby the pin will not become unduly loosened in its bearings.

The invention further consists in the features of construction and combination of parts hereinafter described and claimed.

In the drawings, Figure 1 is a vertical section of one form of pin and bearing of the present invention; Fig. 2 a section of the lower bearing shown in Fig. 1; Fig. 3 a plan view of the lower bearing shown in Fig. 1; Fig. 4 a plan view of the upper bearing shown in Fig. 1; Fig. 5 a view on line 5-5 of Fig. 4; Fig. 6 a view partly in section of a modified construction of bearing; and Fig. 7 a plan view of the upper bearing of the construction shown in Fig. 6.

In car constructions, a center or pivot-pin is provided for each end of the car, about which the trucks turn during usage. In the operation of repairing cars, it frequently becomes necessary to jack the body of the

car up for the purpose of removing the trucks or performing some other repairing operation.

One of the primary objects of the present invention is to allow of a tilting movement between the center-pin and the body of the car, so that when said body is tipped upward at one end during the jacking operation there will be no binding and consequent breakage or bending of the parts at the opposite end of the car. It is also necessary in car constructions to employ center-pins of different heights owing to the fact that in certain forms of car constructions the floor of the car lies nearer the truck than in others. The present invention deals with a manner of solving this problem, and at the same time obviating the necessity on the part of the car builder for carrying a plurality of castings or patterns in stock.

Further objects and aims of the invention will appear as the description of the device progresses, but the two objects above enumerated may be said to constitute the main and salient features of the invention.

I have illustrated two forms of center-pin and bearing, both employing the principles of the present invention. The first and what I now consider to be the preferred form is illustrated in Figs. 1 to 5 inclusive. In this construction, the center-pin consists of an upper section 8, a lower section 9, and an intermediate section 10. The upper section is in the form of a casting provided with flanges 11 adapted to be secured by suitable fastening means to the center rail 12 of the car body. The casting is provided with an upwardly extending neck 13 and a downwardly depending neck 14. The lower casting 9 is provided with suitable flanges 15 adapted to be secured to the center sills of the car body, and is provided with a downwardly projecting shouldered portion 16, and an upwardly extending neck 17. The necks 14 and 17 are, as shown, each threaded upon their interior to receive the threaded end of a pipe 18 which constitutes the intermediate section of the pin.

From the foregoing description, it will be seen that the pin consists of an individual upper section, an individual lower section, and an individual intermediate section, which may be joined together to provide a unitary whole. By this arrangement, two of the sections, namely, the upper and lower sections,

are of a formation to be used in any form or design of car, but the intermediate section can be made of different lengths, so that by utilizing an intermediate section of proper dimension a pin having the proper vertical dimensions can be easily obtained, thus eliminating the casting and carrying in stock of a plurality of different sized pins, thereby reducing the cost of manufacture and the liability of confusion and mistakes. Moreover, it provides a construction whereby, if any element or portion of the pin should be mutilated or broken, the entire pin need not be discarded, but only such portion or portions as may be necessary, thus decreasing the cost of repair work and the expense of maintaining the car. The flange portions which are secured to the center sills of the car may be reinforced by suitable webs 19, thereby making a firm and rigid connection between the pin and the car body.

A feature of the present invention lies in the peculiar formation of the bearings for the pins which permit of the tilting movement previously described.

The upper bearing which is better illustrated in Figs. 4 and 5 consists of a plate 20 having an opening 21 therein of a size to receive the neck 13 of the upper section 8 of the center-pin. The neck and hole are of such relative size as to permit of a turning or pivotal movement of the neck within the opening. The plate 20, as will be clearly seen in Fig. 4, has an outer periphery 22 of polygonal formation, and said plate rests within a polygonal opening 23 formed in a casting, constituting a portion of the car structure, the portion of the car structure illustrated in the drawings in which this opening is located being a portion of the bolster casting. By referring to Fig. 4, it will be seen that the opening 23 and the plate 22 are of unequal dimensions, providing a space and giving the plate a certain amount of sliding movement within the opening. The direction of this movement is longitudinally of the car body, and by this arrangement, when an end of the car is tipped upward, the center-pin can slide and tip into the desired plane to accommodate itself to the tipping of the car body, thus eliminating any bending at this point which, for obvious reasons, would be highly undesirable. By the polygonal formation of the plate and opening, heretofore described, a substantially efficient bearing surface is provided, so that the danger of the plate or the walls of the opening becoming unduly worn during usage, and allowing an undesirable wobbling of the plate within the opening is eliminated, and at the same time the desired pivotal or turning movement of the pin is permitted.

The lower bearing 24, best illustrated in Figs. 1 to 3 inclusive, consists of a plate 25

which is provided with depending flanges 26 along its opposed edges. These flanges overlie a rail of the portion of the car structure to which the bearing and plate is attached, the plate being cast with the rail or secured thereto by suitable locking means, and is provided in the construction shown with a hole 27 in its lower face adapted to receive a lug or projection 28 extending from the surface of that portion of the car structure to which the plate is secured. It might be added that, as the device is illustrated in the drawings, the portions of the car structure referred to, are the rails or beams of the bolsters for the car trucks and for the car body. The plate 25 is provided upon its upper face with a shoulder 28, and said plate has centrally located on its upper face a lug or projection 29. The lower member 9 of the centering pin is formed with a shoulder 30 corresponding to the shoulder 28 and adapted to intermesh therewith, as more clearly shown in Fig. 1, and the lug or projection 29 extends into an opening 31 formed in the lower section of the center-pin, this arrangement providing what may be termed a slot and lug connection between the center-pin and its bearing. It will be noted that the sides of the lug or projection 29 are tapered. This permits of a certain amount of play or movement between the lower end of the center-pin and its bearing in a direction longitudinally of the car body, so that when the tipping or tilting of the car body, heretofore referred to, occurs, the lower end of the pin can assume a position in correspondence to the angle assumed by the car body during such tipping or tilting operation, and at the same time a bearing is provided which permits of the necessary rotative movement of the pin. In order to prevent a shearing of the fastening means which secure the lower bearing plate to the car structure, the shoulders 30 and 28, as well as the lug or projection 27, are provided. It is obvious that these members will absorb the major portions of strains which would occur during usage that would tend to shear the fastening means, and separate the bearing from the plate.

The upper section 8 of the center-pin is provided with a central bore 32, the lower member being provided with a central bore 33, and the intermediate member being provided with a central bore 34. This provides a chamber in the interior of the pin body which is adapted to receive suitable lubricating substance 35, thus maintaining the lower bearing in a constant state of lubrication.

From the foregoing description, it will be seen that the play or movement between the pin and its bearing, previously referred to, is obtained; that the pin is so formed as to easily allow of a variety of sizes to be car-

ried in stock; and that other features of advantage are obtained, and at the same time the structure is in no wise weakened so as to prevent its performing its functions in a manner desired.

The form of device illustrated in Figs. 6 and 7 consists of an elliptical opening 40 cast in the portions of the car structure between which the center-pin is interposed as, for instance, the bolster rails. The elongated portion of the ellipse lies in a direction lengthwise of the car. This permits of the tilting or tipping of the pin in its bearing in the manner described. In this construction the upper and lower ends of the pin are formed alike and the bearings for each end consist of the elliptical opening.

I claim:

1. In a device of the class described, the combination of a center-pin, a bearing for the lower end of said pin comprising a lug adapted to rest within an opening in said end of the pin, said lug and opening being of equal dimensions to permit movement therebetween in a direction lengthwise of the car, and a bearing for the upper end of the pin, substantially as described.

2. In a device of the class described, the combination of a center-pin, a shouldered end on the pin, a bearing for the lower end of the pin in the form of a shouldered plate, the shoulders of the pin and plate intermeshing, said end of the pin and bearing surface therefor being of unequal dimensions to permit movement therebetween in a direction lengthwise of the car, and a bearing for the upper end of the pin, substantially as described.

3. In a device of the class described, the combination of a center-pin, a bearing for the lower end of said pin in the form of a plate, a slot and lug connection between said pin and plate, said end of the pin and the bearing surface therefor being of unequal dimensions to permit movement therebetween in a direction lengthwise of the car, and a bearing for the upper end of the pin, substantially as described.

4. In a device of the class described, the combination with a car bolster, of a center-pin, a bearing for the lower end of the pin in the form of a flanged plate secured to a rail of said bolster, a protuberance on said rail, said plate having an opening to receive said protuberance, said lower end and the bearing surface therefor being of unequal dimensions to permit movement therebetween in a direction lengthwise of the car, and a bearing for the upper end of the pin, substantially as described.

5. In a device of the class described, the combination with a car bolster, of a center-pin, a shouldered lower end on said pin, a bearing for said end in the form of a shouldered flanged plate secured to a rail of said

bolster, the shoulders on said pin and plate intermeshing, a protuberance on said rail, said plate having an opening to receive said protuberance, said lower end and the bearing surface therefor being of unequal dimensions to permit movement therebetween in a direction lengthwise of the car, and a bearing for the upper end of the pin, substantially as described.

6. In a device of the class described, the combination of a center-pin, a plate in which the upper end of the pin is rotatably mounted, said plate having its outer periphery of polygonal formation, a bearing having a polygonal opening to receive said plate, said plate and opening being of unequal dimensions to permit movement therebetween in a direction lengthwise of the car, and a bearing for the lower end of the pin, substantially as described.

7. In a device of the class described, the combination of a center-pin, a plate in which the upper end of the pin is rotatably mounted, said plate having its outer periphery of polygonal formation, a bearing having a polygonal opening to receive said plate, said plate and opening being of unequal dimensions to permit movement therebetween in a direction lengthwise of the car, a plate constituting a bearing for the lower end of the pin, said latter end and the bearing surface therefor being of unequal dimensions to permit movement therebetween in a direction longitudinally of the car body, substantially as described.

8. In a device of the class described, the combination of a center-pin composed of an individual upper portion, an individual lower portion, and an individual intermediate portion, means for joining said portions together, and bearings for the upper and lower portions respectively of the pin, substantially as described.

9. In a device of the class described, the combination of a center-pin composed of an individual upper portion, an individual lower portion, an individual intermediate portion, means for joining the portions together, each of said portions being provided with a vertically extending bore providing a chamber for receiving the lubricating substance extending through said pin, and bearings for the upper and lower ends of the pin respectively, substantially as described.

10. In a device of the class described, the combination of a center-pin composed of an individual upper portion, an individual lower portion, an individual intermediate portion, means for joining the portions together, said upper portion being in the form of a flanged casting, said lower portion being in the form of a flanged casting, said flanged portions being adapted to be secured to a portion of the car structure, and bear-

ings for the upper and lower ends of the pin respectively, substantially as described.

11. In a device of the class described, the combination of a center-pin composed of an individual upper portion, an individual lower portion, an individual intermediate portion, means for joining the portions together, said upper portion being in the form of a flanged casting, said lower portion being in the form of a flanged casting, webs on said casting for reinforcing said flanged portions, said flanged portions being arranged to be secured to a part of the car structure, and bearings for the upper and lower ends of the pin respectively, substantially as described.

12. In a device of the class described, the combination of a center-pin composed of

an individual upper portion, an individual lower portion, an individual intermediate portion, means for joining the portions together, each of said portions being provided with a vertical bore providing a chamber to receive lubricating substance, said upper portion being in the form of a flanged casting, said lower portion being in the form of a flanged casting, said flanged portions being adapted to be secured to a part of the car structure, and bearings for the upper and lower ends of the pin respectively, substantially as described.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."