L. W. BARBER & E. W. WEBB.

ROLLER CENTER BEARING PLATE.

APPLICATION FILED MAR. 28, 1908.

905,491. Patented Dec. 1, 1908.

Fig. 1

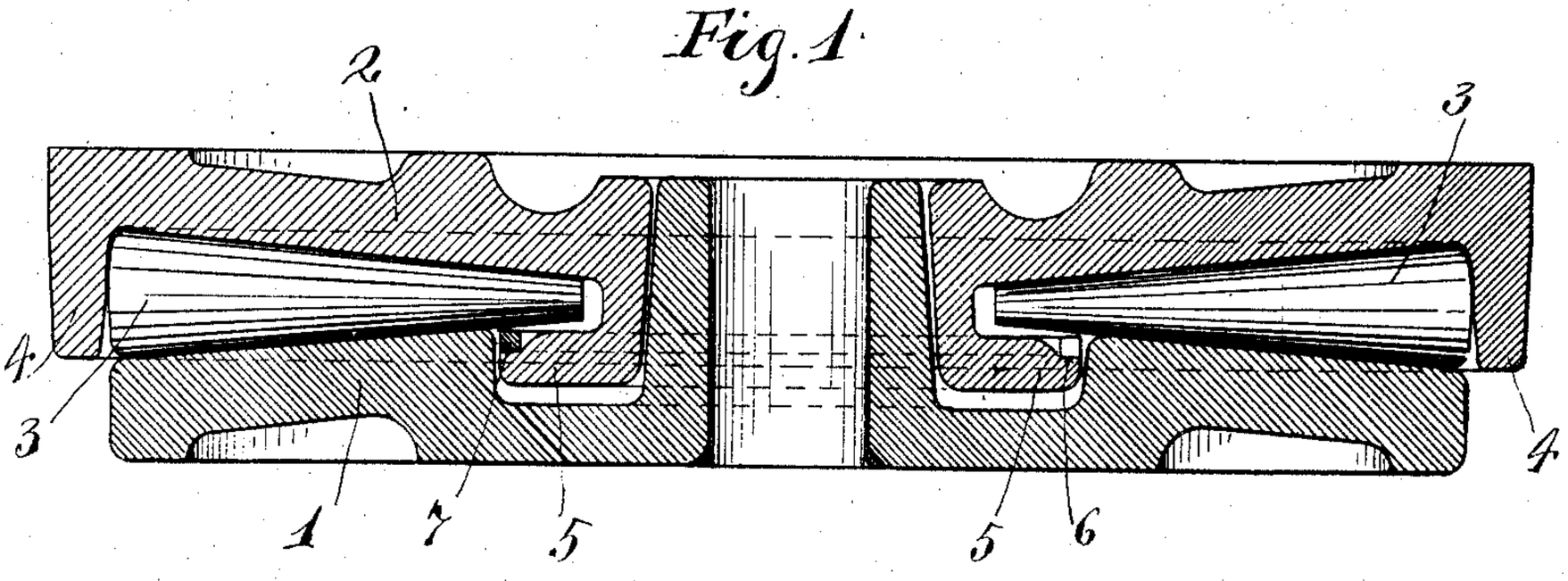


Fig. 2

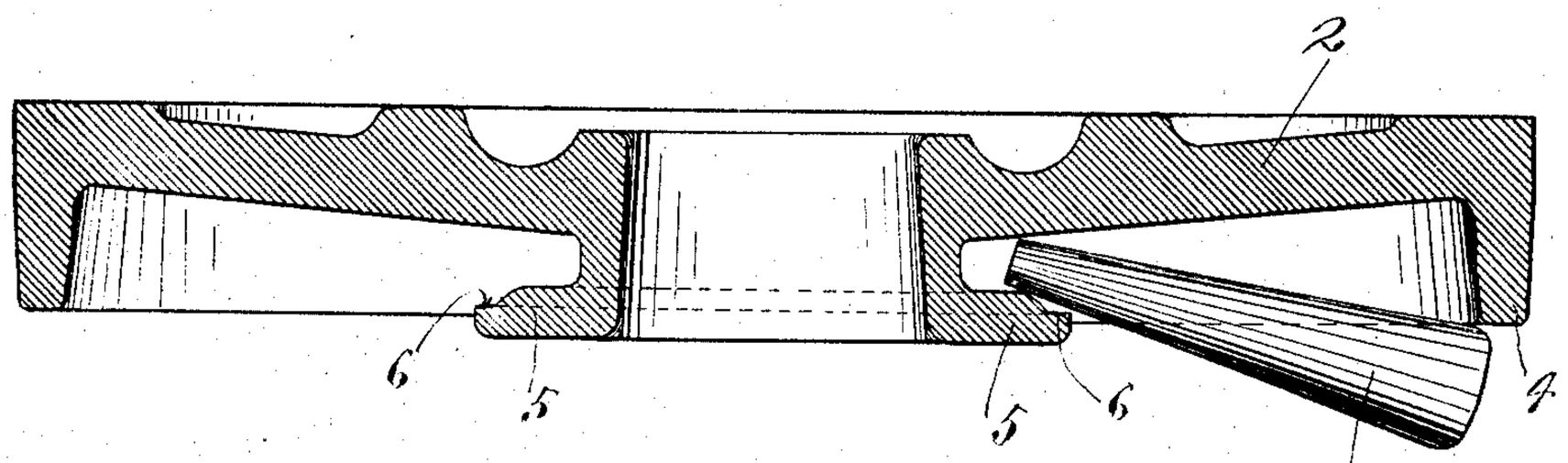
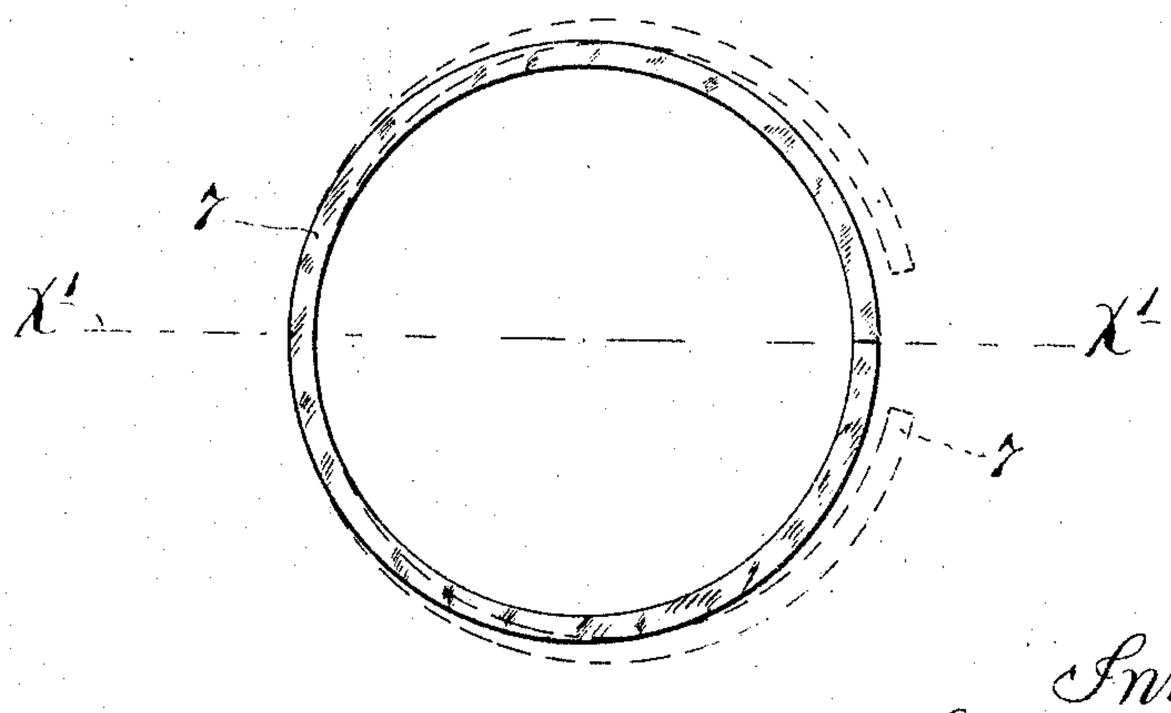


Fig. 3.



Witnesses.
Harry Opsahl.
L. L. Simpson.

Inventors
Lee W. Barber.
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By their attorneys
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UNITED STATES PATENT OFFICE.

LEE W. BARBER AND EDWIN W. WEBB, OF CHICAGO, ILLINOIS, ASSIGNORS TO STANDARD CAR TRUCK COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF NEW JERSEY.

ROLLER CENTER-BEARING PLATE.

No. 905,491. Specification of Letters Patent. Patented Dec. 1, 1908.

Application filed March 28, 1908. Serial No. 423,868.

To all whom it may concern:

Be it known that we, LEE W. BARBER and EDWIN W. WEBB, citizens of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Roller Center-Bearing Plates; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention has for its object to provide an improved roller-equipped center bearing for cars, and other similar uses; and to this end, our invention consists of the novel devices and combinations of devices hereinafter described and defined in the claims.

Our improved center bearing is illustrated in the accompanying drawings, wherein like reference characters refer to like parts throughout the several views.

In said drawings; Figure 1 is a vertical central section through the center bearing, detached, on the line x^1 x^1 in respect to the ring shown in Fig. 3. Fig. 2 is a similar view of the upper plate, separated from the lower plate, with the roller retaining ring and most of the rollers removed, but with one roller shown in removing position; and Fig. 3 is a plan view of the roller retaining spring ring, detached.

The numeral 1 represents the lower plate which is adapted to be secured to the bolster or other part of the car truck.

The numeral 2 represents the upper plate which is adapted to be secured to the body bolster of the car. The two plates have telescoping hubs of the proper construction to admit the usual king pin, not shown.

The numeral 3 represents conical rollers which are radially disposed between the tread surfaces of the two plates. The upper plate 2 is provided with an outer depending flange 4 properly disposed to afford an abutment for the outer or large ends of the rollers 3. The hub of the upper plate 2 is provided with an outwardly extended horizontal flange 5 which under-reaches the inner ends of the rollers 3, when the latter are in working position, and, for distinction, may be called the pocketing flange. The lower plate 1 is so constructed that, when the parts are in working position, the face of the pocketing flange 5 will be on the level with or slightly below the inner edge of the raised tread surface of the lower plate. The upper outer edge of the pocketing flange 5 is cut away to afford a seat 6 for a split spring ring 7 which, when in position thereon, coöperates with the flanges 4 and 5 to hold the rollers properly pocketed on the upper plate; or, otherwise stated, in such a way that the rollers remain permanently with the upper plate as long as the ring 7 remains in position. The parts are so proportioned that when the split ring 7 is removed, the clearance will be sufficient to permit any roller 3 to assume the position shown in Fig. 2, and hence, to be readily removed or permitted to drop out from the upper plate.

As shown, the face of the pocketing flange 5 is cut away on an incline upward and inward from the horizontal section of the seat 6 for the ring 7. This enables the proper clearance for the removal of the rollers to be secured without requiring the flange 5 to extend too far below the tread surface of the lower plate, and enables a retaining ring of less height to be employed. It also has the further advantage that the ring 7 will tend to climb up the inclined part of its seat far enough to insure its retaining function in respect to the rollers. The ring 7 can, of course, readily be sprung to a sufficient extent to be placed in the seat 6 or to be removed therefrom, when desired. In applying or removing the ring, the upper plate 2 would naturally be turned on its back, and this would also be its natural position when locating the rollers thereon. For removing the rollers, they can either be picked out, one at a time, with the plate lying on its back, or be made to all drop out simultaneously, by turning the plate right side up and lifting the same away from the rollers, after the ring has been removed.

The tread surfaces of the two plates conform, of course, to the shape of the interposed conical rollers 3 so as to bear thereon to the full radial length of said tread surfaces. The whole load is taken on the tread surfaces, the rollers, and the outer or thrust flange 4 of the upper plate. The rollers never come in contact with the hub of the upper plate or the pocketing flange 5 thereof except when being placed in or removed from working position. The rollers are cone frustums, the axes and surface lines of which

would, if produced, all meet at the common axis of the two plates. The outer or larger ends of the rollers are rounded to the form of an arc struck on a radius equal to the distance of the thrust flange 4 from the common axis of the two plates at a point coincident with the axis of one of the rollers; and the upper or bearing surface of the inner face of said thrust flange is struck on the same arc so that the rollers and the bearing surface of the thrust flange are in contact from the axes of the rollers upward to the point or line where the peripheral corners of the rollers are slightly cut away. This gives a large bearing surface between the outer ends of the rollers and the thrust flange 4 for taking the thrust strains, and this comes on to the flange 4 in the strongest portion thereof. The inner face of said thrust flange 4, from the circle thereof coincident with the axes of the rollers downward to its lower edge, is cut away so as to afford clearance between the rollers and the flange at all portions thereof below the axes of the rollers; thereby affording a ready means for the outward escape of any dust or dirt which may get between the rollers or onto the tread surface of the lower plate. The clearance between the flange 5 of the upper plate and the underlying lower plate is ample to catch and hold all the dust or dirt which may reach the inner ends of the rollers, or fall from the inner edge of the tread surface of the lower plate.

The tread surfaces of the two plates are conical surfaces, and as many as possible of the rollers are placed between the same so as to secure the maximum bearing surface of the roller form.

Especial attention is called to the split spring ring coöperating with the flange of the upper plate to hold the rollers pocketed thereon. This effects a simplification and decrease in the cost of construction, while affording a device which is entirely reliable and durable in service. As far as we know, we are the first to so pocket the rollers on either plate by means of a removable split ring, and, hence, we desire to claim the same broadly herein.

What we claim is:—

1. A center bearing comprising lower and upper plates and rollers radially disposed between said plates, one of said plates having a thrust flange engaging the outer ends of the rollers, and a pocketing flange overlapping the inner and adjacent ends of the rollers, and a retaining ring detachably applied to said pocketing flange and constituting a supplemental part thereof, and which pocketing flange, when the ring is removed, permits removal of the rollers, and which retaining ring, when in position on said pocketing flange, coöperates with the two flanges to hold the rollers in working positions.

2. A center bearing comprising lower and upper plates having telescoping hubs, conical rollers radially disposed between said plates, said upper plate having a depending thrust flange at its outer edge and a roller pocketing flange on its hub, and a split ring removably applied to said pocketing flange and coöperating with said two flanges to hold the rollers pocketed on the upper plate, substantially as described.

3. The combination with lower and upper plates having telescoping hubs, of conical rollers radially disposed between tread surfaces of said two plates, which upper plate is provided with a depending thrust flange having its inner surface so shaped that the rollers bear against the same only from their axes upward and that there is clearance between the two from the axes of the rollers downward, said upper plate also having a pocketing flange on its hub formed with a ring seat with inclined surfaces extending inward and upward therefrom, and a split ring applied to said seat and coöperating with said two flanges to hold the rollers pocketed on said upper plate, the said lower plate being of less diameter than the inner circle of said thrust flange, substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

LEE W. BARBER.
EDWIN W. WEBB.

Witnesses:
LESTER V. BRATTON,
W. A. MUNGER.