

No. 698,947.

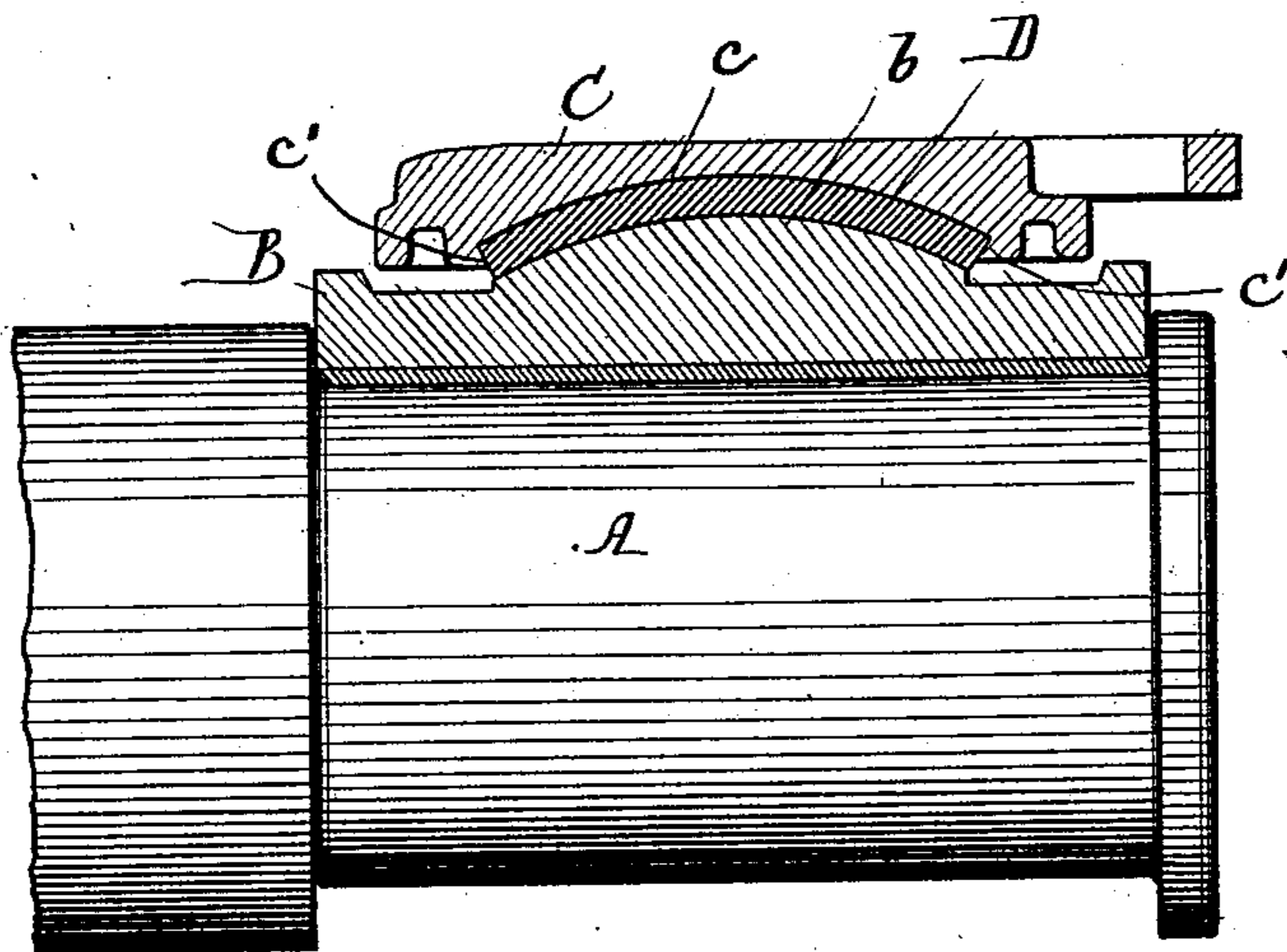
Patented Apr. 29, 1902.

H. H. HEWITT.  
JOURNAL BEARING.

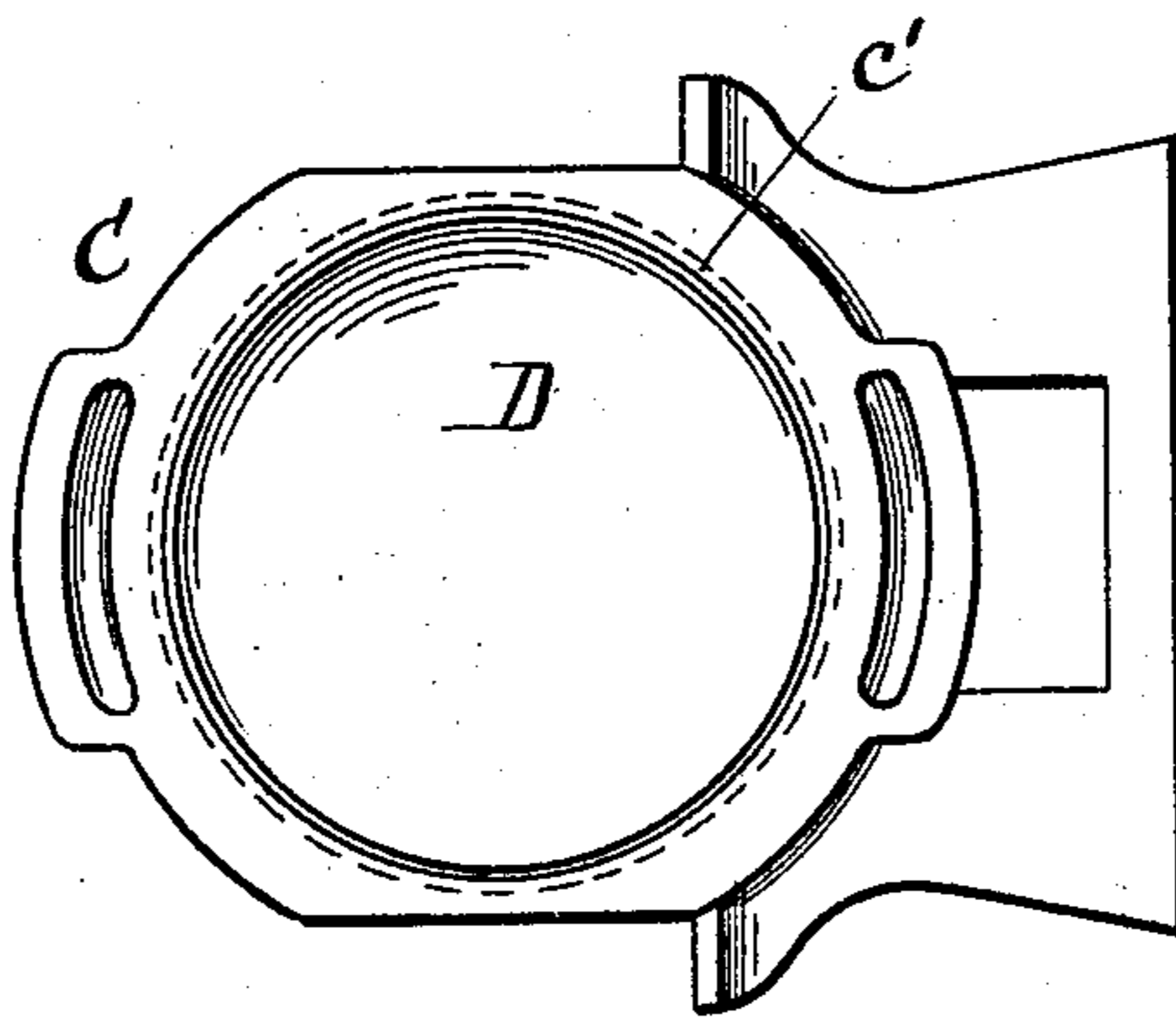
(Application filed Dec. 19, 1901.)

(No Model.)

*Fig 1.*



*Fig 2.*



Witnesses:

*Frederick*

*Alberta Adamick*

*Inventor:*

*H. H. Hewitt*

*By Perin & Fisher*  
*his Attorneys*

# UNITED STATES PATENT OFFICE.

HERBERT H. HEWITT, OF BUFFALO, NEW YORK.

## JOURNAL-BEARING.

SPECIFICATION forming part of Letters Patent No. 698,947, dated April 29, 1902.

Application filed December 19, 1901. Serial No. 86,508. (No model.)

*To all whom it may concern:*

Be it known that I, HERBERT H. HEWITT, a citizen of the United States, and a resident of Buffalo, in the county of Erie, State of New York, have invented certain new and useful Improvements in Journal-Bearings, of which the following is a full, clear, and exact description.

This invention has relation to that class of journal-bearings particularly designed for the journals of car-axes.

One familiar style of car-axle bearing now extensively used comprises a "journal-brass" having its under surface shaped to fit upon the journal and having its back or upper surface formed with a spherical convex that enters a corresponding concave on the under surface of a bearing-piece that is flat upon its upper face and is revolubly held within a chamber of a key or wedge whereon rests the top of the journal-box. Various objections have been urged against this style of bearing, one being its expense and another being that the loose fitting of the bearing-piece within the chamber of the wedge allows a degree of movement to the bearing-piece under the severe shocks and strains to which the parts are subjected that is apt to cause danger of breakage of the parts. To overcome these objections, it has been proposed to omit the bearing-piece intermediate the brass and the wedge or key and to form the under side of the key with a concave adapted to directly receive the spherical convex on the top of the journal-brass. Such construction is objectionable, however, for the reason, among others, that a kind or quality of metal most economical and best adapted for the key or wedge is not one best suited for a wearing or bearing surface to engage the convex of the brass.

The object of my present invention is to provide a simple, cheap, durable, and effective car-axle bearing that shall be free from the objections made to prior devices of this character; and the invention consists in the construction hereinafter described, illustrated in the accompanying drawings, and particularly pointed out in the claims at the end of this specification.

Figure 1 is a view in vertical longitudinal section through a car-axle bearing embody-

ing my invention, the journal of the axle being shown in elevation. Fig. 2 is a detail inverted plan view of the key or wedge with the bearing-plate in place.

Upon the journal A of the car-axle is set a brass B of familiar construction, the upper surface of this brass being formed with the usual spherical convex *b*. My invention resides in the novel construction of the key or wedge C, that is formed upon its under surface with a seat *c*, wherein tightly fits the bearing-plate D. As shown, the seat *c* of the wedge C is concave to conform to the convex upper surface of the bearing-plate D, and the under surface of the bearing-plate is formed with a concave corresponding to and adapted to receive the convex *b* on the top of the brass B. The bearing-plate D is held rigidly within the seat *c* of the wedge C, preferably by being cast therein or by being forced therein under hydraulic pressure, although, if preferred, the bearing-plate D may be securely riveted to the wedge or key.

In the preferred form of the invention the concavo-convex bearing-plate D has its edge in a measure inclosed by the overhanging portion *c'* of the wedge or key. This overhanging portion fits tightly against the edge of the bearing-plate and aids in holding the same rigidly against movement independent of the wedge. The wedge C is preferably formed of malleable iron, and the bearing-plate D is formed of a metal—such as bronze, tool-steel, or the like—capable of taking a high polish. The bearing-plate D being of a superior kind or quality of metal adapted to effectively resist wear may be comparatively thin, while the body of the key of malleable or cast iron gives the required strength and at the same time is economical.

By forming the bearing-plate D as a concavo-convex plate, as I prefer to do, and by rigidly securing it within the recess of the wedge C the strains delivered to the wearing-face of the plate D are more effectively transmitted to the wedge than would be possible if the upper surface of the bearing-plate were flat and if this plate were so loosely held within the wedge as to be capable of revolution and a greater thickness is given to the body of the wedge above the outer edges of the bearing-plate, which enables the wedge

to more effectively resist the strains incident to the relative shifting of the brass and wedge. By forming the bearing-plate D of tool-steel, bronze, or the like and by polishing the concave face of this bearing-plate before it is placed in service a freedom of movement between the bearing-plate and the convex of the brass is at once obtained, which renders unnecessary the mounting of the bearing-plate revolvably upon the wedge or key, and the danger of the heating of the journals incident to the application of new bearings is thereby in great measure avoided.

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

1. A key or wedge for a car-axle bearing having its under surface formed with a seat and a bearing-plate of a different kind or quality of metal rigidly fixed in said seat and having its under surface formed with a spherical concavity adapted to receive a convex on the top of the axle-brass.

2. A car-axle bearing, comprising a brass convex upon its upper surface in combina-

tion with a key or wedge having its under surface formed with a concaved seat and a concavo-convex bearing-plate of a different kind or quality of metal rigidly held in said seat, the under surface of said bearing-plate receiving the convex on the top of said brass.

3. A car-axle bearing, comprising a journal-brass convex upon its upper surface in combination with a key or wedge formed with a concaved seat or recess and a concavo-convex bearing-plate of a different kind or quality of metal rigidly fixed in said seat or recess, the edges of said bearing-plate being engaged by the overhanging portions of the key or wedge.

4. A key or wedge for a car-axle bearing formed of iron and having its under side provided with a concaved recess, and a concavo-convex bearing-plate of a different kind or quality of metal having a polished lower surface and rigidly fixed in the seat of said key or wedge.

HERBERT H. HEWITT.

Witnesses:

GEO. P. FISHER, Jr.,  
ALBERTA ADAMICK.