No. 701,065. Patented May 27, 1902.

G. W. MAGEE.

CAR AXLE BOX AND BRASS.

(Application filed Feb. 14, 1902.)

(No Model.)

Fig. 2.

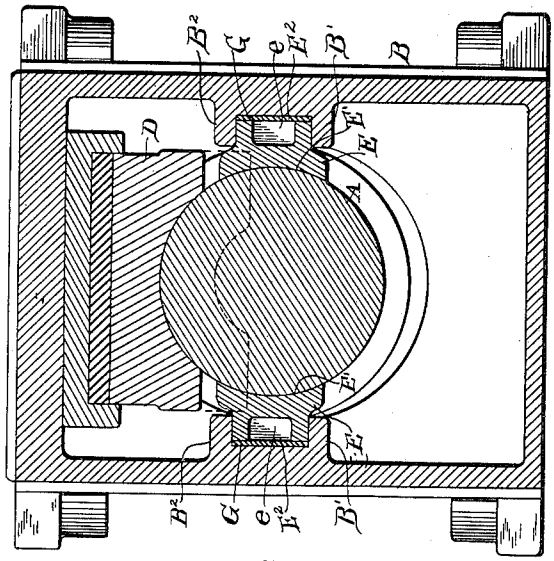


Fig. 4.

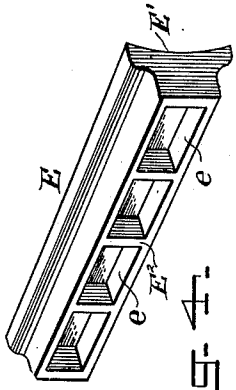


Fig. 3.

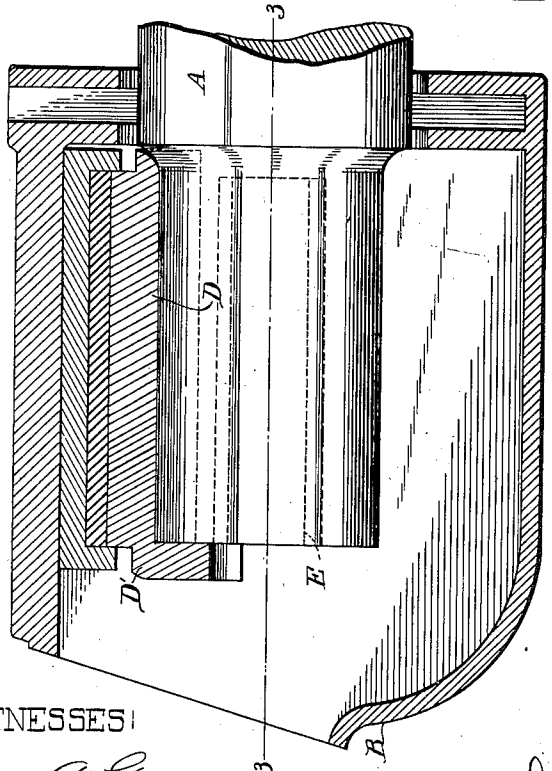
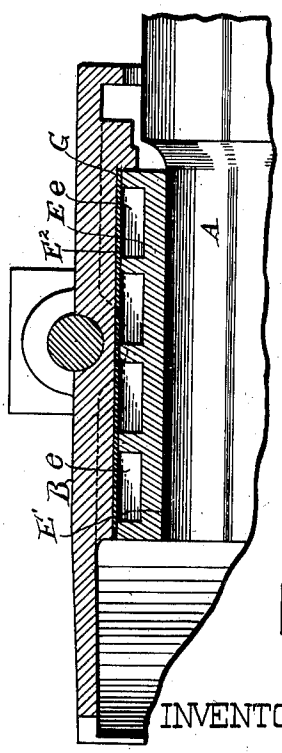


Fig. 5.



WITNESSES:

Marc A. Guigou.

M. F. Boyle

INVENTOR.

George W. Magee

BY

Thomas Bros Staton

ATTORNEY.

UNITED STATES PATENT OFFICE.

GEORGE W. MAGEE, OF BROOKLYN, NEW YORK.

CAR-AXLE BOX AND BRASS.

SPECIFICATION forming part of Letters Patent No. 701,065, dated May 27, 1902.

Application filed February 14, 1902. Serial No. 94,009. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. MAGEE, a citizen of the United States, residing in the borough of Brooklyn, in the city and State of New York, have invented a certain new and useful Improvement in Car-Axle Boxes and Brasses, of which the following is a specification.

The principal strains to which car-axle bearings are subjected may be stated as follows: first, those imposed by the weight of the car and its load; second, the side thrust on the bearing due to checking the speed of the train when the brakes are applied; third, the direct pressure of the brakes. The first is a vertical strain and is equal to the weight of the car and its load. The second is a horizontal strain and varies in amount according to the speed and weight of the train and the suddenness with which it is brought to rest. The third is so nearly a horizontal strain that I have assumed it to be so. When a fast-moving train is brought to rest by the application of the brakes, excessive strain is transmitted to the rear side of the journal-bearing brass. The pressure applied to the forward brakes is also transmitted to the rear side of the journal-bearing. When a train is running free, the journal is subjected to vertical strain only. When checking the speed of a train by means of the brakes, the journal and its bearing-brass are subjected to all three of these strains combined.

The object of my invention is to relieve the journal-bearing brass of all strain except the first-named—that due to the load. This is accomplished by means of two side cheek bearing-brasses of large surface, one on the forward and one on the rear side of the journal and fitted so as to take all the horizontal strains. These cheek-brasses are supported and retained in position opposite to the fore-and-aft center line of the journal by projecting ledges on the sides of the journal-box.

The horizontal strains on car-axle bearings, which occur at frequent intervals and which are often excessive, have been heretofore very imperfectly borne by the shallow bearing-brass on top of the journal. My invention, on the contrary, does not depend on the bearing-brass to sustain any part of this strain, but provides a practicable and efficient side cheek-brass for that purpose. I have devised a simple construction of the mechanical details for accomplishing these results without necessitating any change in the exterior form or dimensions of the journal-box, which is set forth in the following description and pointed out in the claims.

The following is a description of what I consider the best means of carrying out the invention.

The accompanying drawings form a part of this specification.

Figure 1 is a vertical section in the plane of the center line of the axle. Fig. 2 is a vertical section in a plane at right angles to that in Fig. 1. Fig. 3 is a horizontal section of a portion on the dotted line 3 3 in Fig. 1. Fig. 4 is a perspective view of a side cheek-brass detached.

Similar letters of reference indicate corresponding parts in all the figures where they appear.

A is the journal, made without the ordinary end collar.

B is the journal-box, certain portions being designated when necessary by super-numerals. The exterior is in all respects of the ordinary form and dimensions. The interior is cast with two horizontal ledges B' B^2 on the right side and the same on the left side. The lugs in the upper part of journal-boxes, which now transfer the horizontal thrust to the bearing-brass, are omitted.

D is the crown or top bearing-brass, adapted to receive the load through the intervention of springs (not shown) and to serve in all respects in the ordinary manner, except that it is relieved of all horizontal thrust, and the outer end is formed with a flange or head D', extending across the front end of the journal. This brass is by my invention relieved from all horizontal pressure when the brakes are applied; but this absence of horizontal strain does not involve any necessary change in the construction. The movement in one direction or the other according as the car is traversing in one direction or the other is resisted entirely by the side cheek-brasses.

E E are the side cheek-brasses. Each extends the length of the bearing. One face E' fits fairly against the adjacent side of the journal A. The opposite face E^2 is rabbeted,

as indicated by *e e*, and is received freely between the ledges B′ B². The full portion E² of each side cheek-brass bears fairly against the inner face of the box. It follows from this arrangement that my top brass D is subject to pressure only in the vertical direction. One or the other of my side cheek-brasses E is subject to pressure every time the inertia of the car is arrested. In ordinary traffic the cars will make about equally sudden stops in one direction as in the other, the side cheek-brasses will take the pressure about equally, depending upon the direction of motion. Owing to the large bearing-surface of the cheek-brasses their reduction by wear will be but slight. This may be "taken up" by placing shimming-plates G between them and the journal-box. These side cheek-brasses are kept in place endwise by the overhanging flange or head D′ of the top brass. Whenever it is required to insert or remove one or both of the side cheek-brasses, the axle may be jacked up enough to relieve the top brass D from the load, and then there being no flange on the journal the top brass is easily drawn out, thus exposing the cheek-brasses. The reverse movement restores the parts again to position for work.

In the working of my invention each top brass is entirely relieved from all strains except the vertical and remains in the center of the box under all conditions, its only horizontal motion in the box being the very slight clearance between the side of the journal and the cheek-brass.

Modifications may be made without departing from the principle or sacrificing the advantages of the invention. The ledges B′ B² are not necessarily continuous. They may be made in three or more horizontal projections, but should be made integral with the box, presenting faces toward the cheek-brasses adapted to support said brasses when at rest and also to retain them in position when subject to excessive pressure.

I claim as my invention—

1. In combination with a car-axle box, guiding and supporting ledges in its interior sides, side cheek-brasses in said ledges and a top brass, substantially as set forth.

2. In combination with a car-axle box, guiding and supporting ledges in its interior sides, side cheek-brasses in said ledges, and a top brass D formed with a head or flange D′ adapted to retain the side cheek-brasses, all arranged to serve substantially as herein specified.

3. In combination with a car-axle box, guiding and supporting ledges in its interior sides, side cheek-brasses in said ledges and a top brass D formed with a head or flange D′ adapted to retain the side cheek-brasses E and with shimming-pieces G, all substantially as herein specified.

In testimony that I claim the invention above set forth I affix my signature in presence of two witnesses.

GEO. W. MAGEE.

Witnesses:
J. B. CLAUTICE,
M. F. BOYLE.