T. D. RULON.

Car-Axle Box-Bearings.

No. 166,414. Patented Aug. 3, 1875.

Fig. 1.

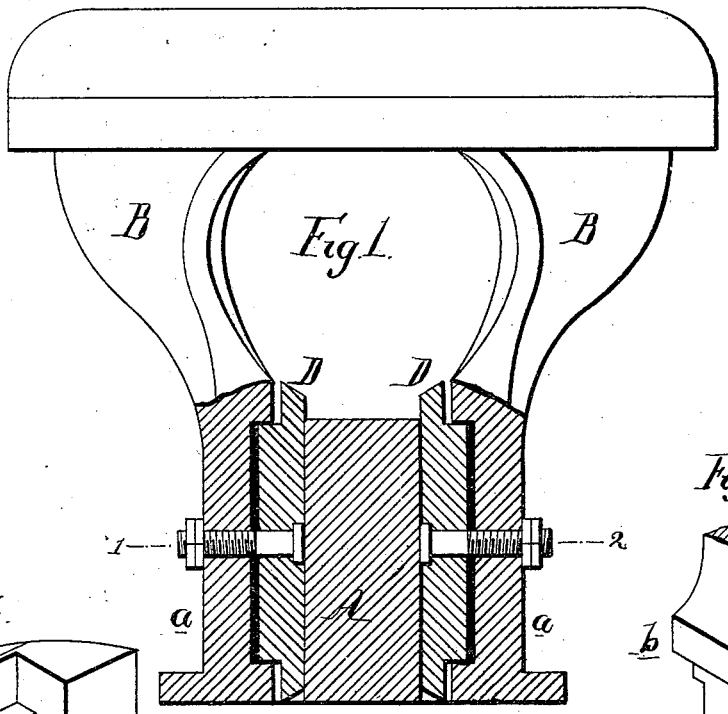


Fig. 3.

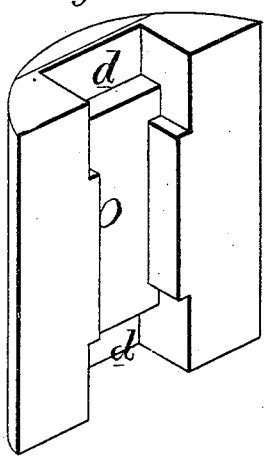


Fig. 4

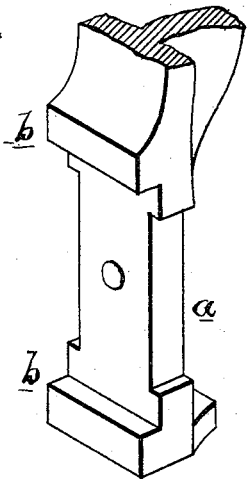
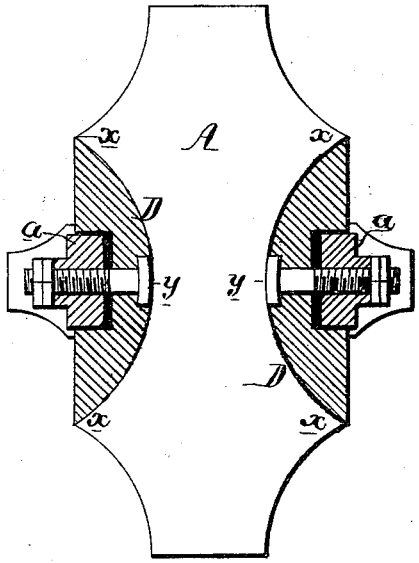


Fig. 2



Witnesses,
Harry Smith
Hubert Howson

Thomas D. Rulon
by his attorneys,
Howson and Son.

UNITED STATES PATENT OFFICE.

THOMAS D. RULON, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-HALF HIS RIGHT TO JOHN H. RULON, OF SAME PLACE.

IMPROVEMENT IN CAR-AXLE-BOX BEARINGS.

Specification forming part of Letters Patent No. **166,414**, dated August 3, 1875; application filed June 2, 1875.

To all whom it may concern:

Be it known that I, THOMAS D. RULON, of Philadelphia, Pennsylvania, have invented certain Improvements in Axle Boxes and Hangers, of which the following is a specification:

The object of my invention is to construct a car-axle box and hanger in which both lateral and longitudinal strains are effectually resisted, and in which all looseness caused by wear can be quickly remedied.

These objects I attain in the manner which I will now proceed to describe, reference being had to the accompanying drawing, in which—

Figure 1 is a side view, partly in section, of my improved axle-box and hanger; Fig. 2, a sectional plan on the line 1 2, Fig. 1; and Figs. 3 and 4, perspective views of the guiding-plate and a portion of the hanger.

Ordinary axle-boxes of railroad-cars have guiding-ribs formed upon their sides, and are arranged to slide vertically between, and are guided by, the legs of the hanger. Hangers of this class become so worn on their guiding-surfaces, which are in contact with the box, that they have, in time, to be discarded. Attempts have been made to remedy this defect by forming a V-shaped groove in the side of the box, and providing the hanger with a Y-shaped guide, which can be moved out as it becomes worn; but this is also objectionable on account of the rapid wearing away of the guide. I overcome the difficulty by constructing the guide and hanger in the manner shown in the drawing, in which—

A represents an axle-box, and B the hanger secured to the frame of the car. The lower portion of this hanger has parallel sides *a a*, the inner edges of which are adapted to grooves formed in the rear edges of the guiding-plates D, the front edges of which are made convex, and are adapted to corresponding concave recesses formed in the sides of the axle-box. The guiding-plates D are, in the present instance, secured to the hanger by means of a bolt and nuts, and packing-strips can be introduced between the hanger and the guide when it is desired to move the latter out to compensate for the effects of wear; but other modes of securing the guiding-plates may be adopted; or the said plates may form part of the hangers, if desired. To prevent the vertical movement of the guides I form on the hanger projections *b b*, and in the guide corresponding recesses *d d*, so that the guide has ample bearing-surface, both above and below, to resist this movement.

The application of the brakes to the wheels of a railroad-car causes a more rapid wearing of the lower portion of the guide than of the upper portion, and I compensate for this uneven wear by reversing the guiding-plates at intervals, so as to bring their comparatively unworn upper ends into contact with the worn lower part of the axle-box.

The above-described hanger presents the full surface of the guiding-plate to resist the lateral pressure of the axle-box, while the longitudinal pressure is resisted by one-half the area of each guide—that is to say, from the point *x* to the point *y*.

Owing to the curved form of the guides and of the recesses in the axle-box, both lateral and longitudinal wear will be compensated for by setting out the guiding-plates.

I claim as my invention—

1. The combination of the hanger B and its fixed or adjustable guiding-plates D, having convex faces, with the axle-box A, in the sides of which are formed concave recesses, all as and for the purpose set forth.

2. The guiding-plates D, secured to the legs *a* of the hanger by means of central bolts, and provided at each end with recesses *d d*, in combination with the projections *b b* formed on each leg *a*, and adapted to the recesses *d d* of the plate, all as and for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

THOS. D. RULON.

Witnesses:

HUBERT HOWSON,

HARRY SMITH.