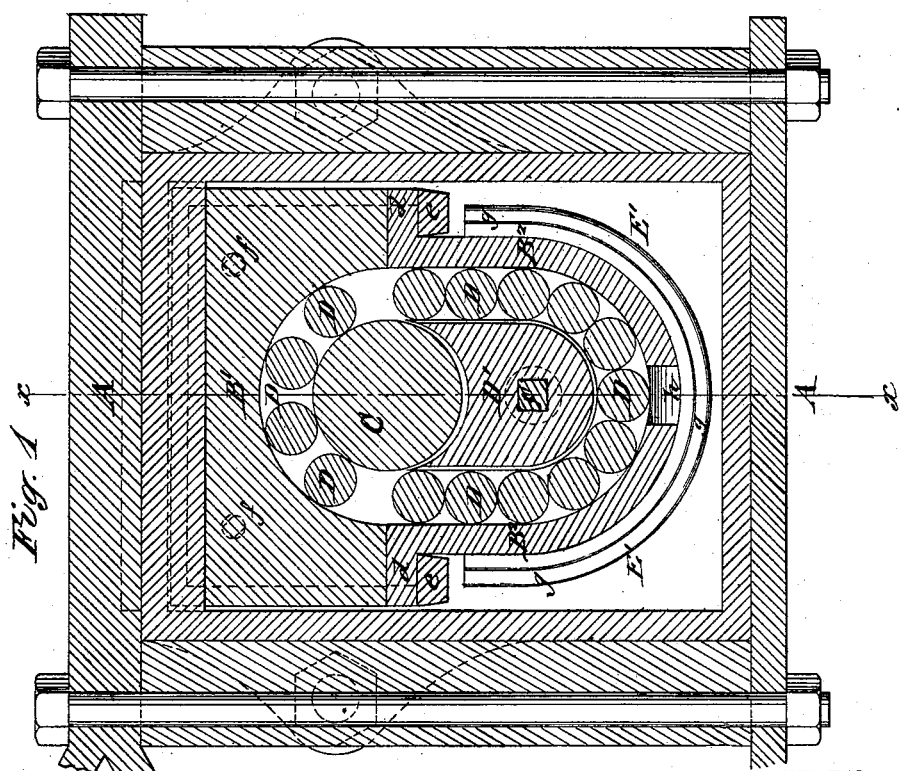
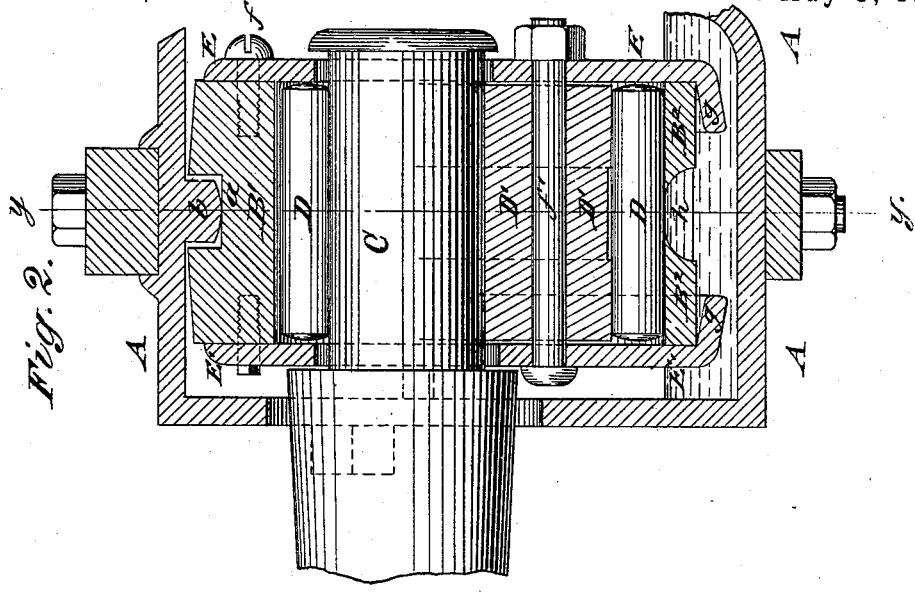


E. L. COLMAN.  
 CAR-AXLE BOX.

No. 190,468.

Patented May 8, 1877.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

EDWARD L. COLMAN, OF VANDALIA, MISSOURI.

## IMPROVEMENT IN CAR-AXLE BOXES.

Specification forming part of Letters Patent No. 190,468, dated May 8, 1877; application filed October 30, 1876.

*To all whom it may concern:*

Be it known that I, EDWARD L. COLMAN, of Vandalia, in the county of Audrain and State of Missouri, have invented a new and Improved Axle-Box, of which the following is a specification:

In the accompanying drawing, Figures 1 and 2 represent vertical transverse and longitudinal sections, respectively on lines *y y*, Fig. 2, and *x x*, Fig. 1, of my improved axle-box.

Similar letters of reference indicate corresponding parts.

The invention relates to an improved car-axle box, with anti-friction and self-oiling devices; and consists of the journal revolving in an elongated box, which is made of a top and bottom section, secured by bolted face and back plates.

A number of friction-rollers pass around the journal and around a guide-channel below the same, taking up the oil by a bottom inlet from the outer box.

In the drawing, A represents the outer inclosing-box, on which the truck-frame is supported, and contains an inner journal-box, that connects by a top groove, *a*, at right angles to the axle C, with a rounded-off top rib, *b*, of the outer box. This admits the lateral motion of the journal-box independently of the outer box or casing, so as to give a certain play to the truck without straining the bearings or supports of the same.

The journal-box is made of a top section, B<sup>1</sup>, and a bottom section, B<sup>2</sup>, of which the top section is arranged at such distance from the axle-journal that a space of sufficient size for the introduction of a number of anti-friction rollers D is provided.

Below the journal is arranged an elongated guide-block, D', which is rounded off at the lower part, and placed at the same distance from the bottom section B<sup>2</sup> as the journal from the upper section. The anti-friction rollers D are thereby allowed to travel around the journal and around the guide-block, and then up again to the journal. The top and

bottom sections B<sup>1</sup> B<sup>2</sup> are connected by side flanges *d* of the lower section, resting on lips *e* of the top section. The rollers D are retained in the journal-box by means of front and rear plates E E', that are applied by fastening-screws *f* to the top section, and by a square bolt, *f'*, passing through the guide-block or partition D'. Flanges *g* of the front and back plates bear on the bottom section B<sup>2</sup>, and serve to support the same. The bottom section B<sup>2</sup> has a central oil-inlet, *h*, at the lowermost part, through which the oil is fed to the rollers D.

The space between the outer and inner boxes is filled up with any suitable packing that supplies the oil to the rollers, which carry it up to the journal, so as to lubricate the same and return the surplus oil to the packing in the outer box. The supply of the required quantity of oil is thus kept up in economical and uniform manner in proportion to the speed at which the axle revolves.

The rollers feed the oil, and are placed at some distance from each other on the top of the journal, so as not to come in contact with each other. They remain always at a certain distance, for as soon as one is forced down on one side a roller is coming up on the other side.

The anti-friction rollers diminish the friction of the journal and feed the oil in economical manner, so as to produce a car-axle box of superior quality.

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

The combination of the top block B<sup>1</sup>, aperture bottom plate B<sup>2</sup>, side plates E, partition or guide-block D', and series of loose friction-rollers D with the external casing or box A and journal, substantially as and for the purpose set forth.

E. L. COLMAN.

Witnesses:

JAMES M. BOYDEN,  
W. C. WILSON.