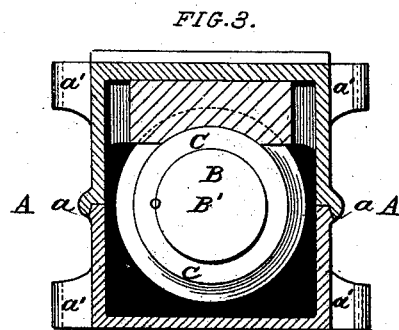
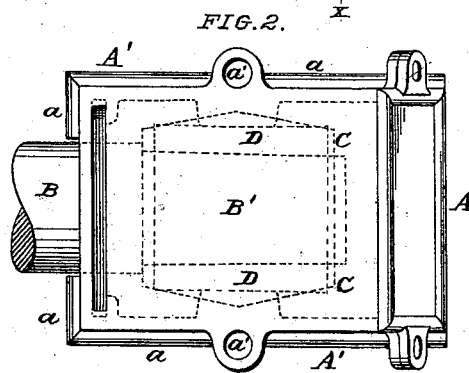
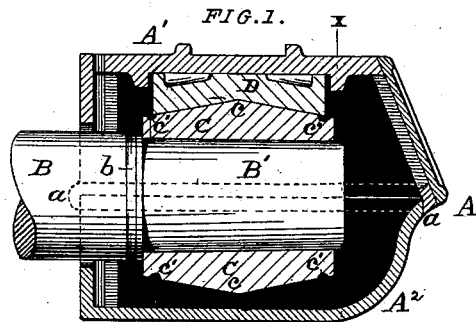


D. DEVLIN.  
Car-Axle Journal.

No. 221,040.

Patented Oct. 28, 1879.



ATTEST:

*Robert Burns*  
*Samuel H. Little*

INVENTOR:

*Daniel Devlin*

# UNITED STATES PATENT OFFICE.

DANIEL DEVLIN, OF ST. LOUIS, MISSOURI.

## IMPROVEMENT IN CAR-AXLE JOURNALS.

Specification forming part of Letters Patent No. **221,040**, dated October 28, 1879; application filed July 7, 1879.

*To all whom it may concern:*

Be it known that I, DANIEL DEVLIN, of the city of St. Louis, in the State of Missouri, have invented certain Improvements in Car-Axle Boxes and Journals; and I do hereby declare that the following specification is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

This invention consists—

First, in the provision of a metallic bearing, shrunk or otherwise secured on a reduced end of the axle. The said sleeve is made tapering from its center toward its ends, and turns in an ordinary brass boxing, the bearing-surface of which is formed to the shape of the said bearing-sleeve, so that the necessity of collars on the axle to limit endwise movement of the same is overcome, as the tapering collar will perform this function equally as well. The construction of my improved journal or bearing also obviates the necessity of waste in the box, as the lower face of the journal will run in a body of oil in the oil-cellar, owing to the fact that it projects below the wall of said box. It is preferred to make the reduced portions of the axle and the bore of the bearing-sleeve slightly tapering, so that in removing the car-wheel from the axle there is less liability of bending the ends of the axle in pressing the bearing-sleeves off with the car-wheel.

Second, in certain details of construction, as will hereinafter more fully appear.

In the drawings, Figure 1 is a vertical section. Fig. 2 is a top plan, and Fig. 3 is a transverse section at line X X.

A is the boxing, formed in two sections, A<sup>1</sup> A<sup>2</sup>, which are united together by a lap or other joint, *a*. The two sections may be bolted together by bolts, or the ordinary bolts that secure the box to the truck-frame may pass through the ears *a' a'* of the boxing to hold the two sections together. This construction allows the boxing to be cast without cores, and hence is much cheaper than the ordinary box; and, should one section be broken, it can be readily replaced without the loss of the whole box.

B is the axle, having a reduced portion, B',

on which is shrunk or otherwise secured the bearing-collar C, the bearing-surface of which tapers from its center *c* to its ends, as shown, and the bearing box or brass D is shaped to fit the tapering surfaces of the collar. This construction obviates the necessity of collars on the axle to limit the endwise movement of the same, as the tapering form of the collar C performs this function equally as well, and at the same time takes up the lubricant and evenly and perfectly distributes it to the bearing-surfaces.

It is preferred to form the bearing-collar somewhat longer than the brass or box D, and providing the projecting portions of the collar with circular grooves *c'*, to arrest the oil and conduct it back to the oil-cellar, and thus prevent its leaking out through the axle-opening of the box around the axle. The axle may also be provided with a groove, *b*, to assist in preventing the said leakage of oil.

Again, it is preferred to have the end of the axle project a small distance outside the bearing-collar, so as to allow a hydraulic ram or other device to act when it is desired to remove said bearing-collar.

A dowel-pin may be inserted in a groove between the bearing-collar C and the axle B' to prevent the turning of said collar upon the axle.

By my improved construction the rapid wear of the axle-journal is overcome, and the lifetime of the same is indefinitely lengthened, for the reason that the collar or sleeve takes all the wear, and when it becomes so worn as to be unfit for use it can be readily removed and replaced by a new one without injuring the axle; and, although it is preferred to use a double-tapering sleeve, as shown, still it is evident that a plain cylindrical sleeve can be used, and, with a collar on the end of the axle, effect the purpose above stated.

With my improved construction the axle-box can be made to fit the axle very compactly between the bearings and the wheel, owing to the box being put together in two sections.

Having thus fully described my said invention, what I claim is—

1. The car-axle provided with a bearing-col-

lar, C, having a double tapering bearing-surface, as and for the purpose set forth.

2. The combination of the car-axle B, having a reduced portion, B', with a bearing-collar, C, tapering from its center, and box or brass D formed to fit the same, substantially as set forth.

3. The tapering collar C, provided with a circular groove, c', at one or both ends, as and for the purpose set forth.

4. The combination, with a removable bearing-collar, C, of the axle B, arranged to project outside the said bearing-collar, as and for the purpose set forth.

DANIEL DEVLIN.

Witnesses:

ROBERT BURNS,  
FRANK DEFFRY.