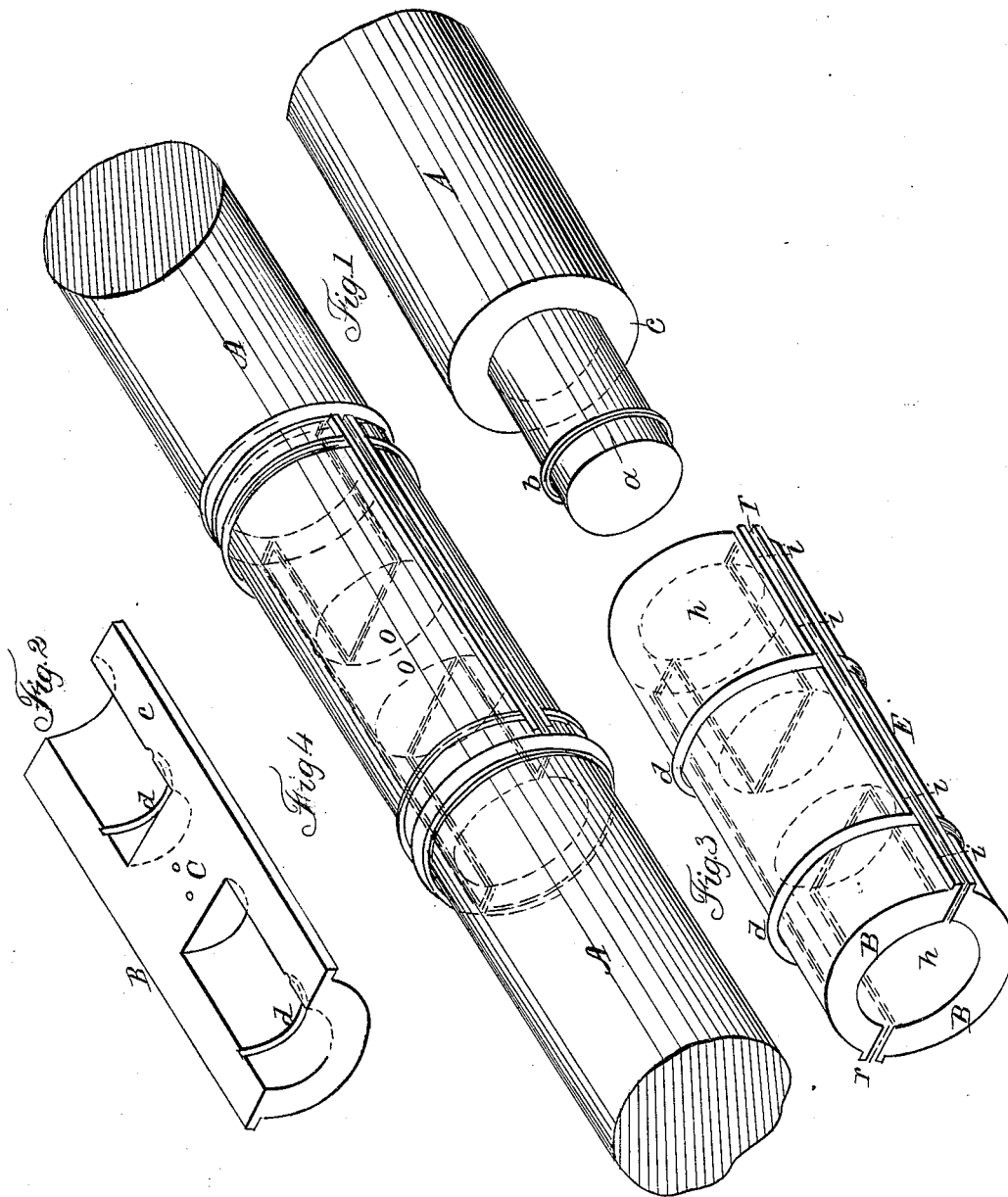


J. W. CLARKE.

Car Axle.

No. 50,796.

Patented Nov. 7, 1865.



Witnesses;  
Isaac L. Mead  
J. E. Millard

Inventor;  
John W. Clarke

# UNITED STATES PATENT OFFICE.

JOHN W. CLARKE, OF MANCHESTER, WISCONSIN.

## IMPROVED CAR-AXLE.

Specification forming part of Letters Patent No. 50,796, dated November 7, 1865.

*To all whom it may concern:*

Be it known that I, JOHN W. CLARKE, of Manchester, in the county of Green Lake and State of Wisconsin, have invented certain new and useful Improvements in the Manner of Constructing Car-Axles; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, and to the letters of reference marked thereon.

Similar letters, wherever they occur, indicate corresponding parts.

The nature of my invention consists in making the axles of cars in three parts, it being divided transversely and so arranged that while two parts, with their connecting-piece, extend across the car in a straight line each wheel is permitted to turn with its axle independent of the others.

To enable others skilled in the art to construct and use my invention, I will proceed to describe it.

A, Figure 1, represents a portion of a car-axle, which is made somewhat less than half the length of the ordinary axle when made in a single piece. At its inner end this axle A is provided with a journal, *a*, which has upon it an annular projection, *b*, as shown in the drawings, this journal and projection being turned up with accuracy. To the outer end of this axle a wheel is attached in the ordinary manner, and has at its outer extremity a journal, as in ordinary cases. A similar axle is provided for the opposite side of the car, the two placed in a line, with their journals *a* at their inner ends directly opposite each other.

B represents a metal piece for uniting the inner ends of the axles A. It is formed solid at its center, with a semicircular recess at each end, as shown, to form a box for the reception of the journal *a*. A groove, *d*, is formed in the recess of proper size and form to fit the projection *b* on the journal. Two of the pieces B are fitted together, as shown in Fig. 3, and securely fastened by bolts passing through their flanges, and also through their central solid portion, C, the journals *a* of the axles being inserted before the pieces B are bolted

together. The projections *b*, working in the grooves *d*, serve to keep the axles from drawing asunder, the shoulders *c* of the axle coming in contact with the end of B, and thus holding the wheels firmly in position and preventing any lateral play, excepting only the usual movement of the outer journals in their boxes.

The central connecting portion of the axle may be permitted to revolve with the axles, in which case there will be but very little wear of the journals *a* in their boxes, and at the same time one wheel will be permitted to revolve either faster or slower than its corresponding wheel in turning curves; or, if it be desired to give to the inner ends of the axles a firmer and more rigid support, the connecting part B may be bolted firmly to the truck, in which case the journals *a* will constantly revolve in their bearings when the wheels are in motion.

In order to compensate for the wear of the journals *a* in their boxes and prevent their becoming too loose, I insert thin pieces of sheet metal, rubber, or other suitable packing, *r*, between the pieces B before bolting them together, so that when the parts become loosened by wear it is only necessary to remove some of the packing and thus tighten them up again.

By this construction of axles the wheels are permitted to revolve independently of each other, thus obviating entirely the slipping of the wheels and the consequent torsional strain of the axle which necessarily attend the passing around curves where the axles are made whole in the usual manner, and thus a great saving is effected in the wear of the wheels and the rails.

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

A car-axle composed of the independent short axles A, provided with the journals *a*, having the projections *b* thereon, in combination with the central connection-pieces, B, constructed and operating as and for the purposes set forth.

JOHN W. CLARKE.

Witnesses:

ISAAC F. MEAD,  
J. E. MILLARD.