C. M. KIMBALL.
Car-Axle Coupling.

No. 198,747. Patented Jan. 1, 1878.

Fig. 1.

Fig. 2.

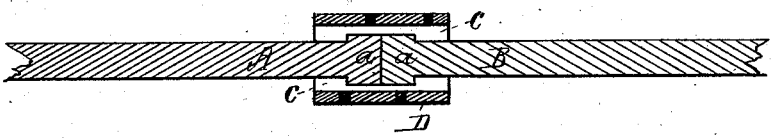
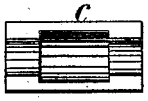


Fig. 3.

Fig. 4.



Witnesses.
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UNITED STATES PATENT OFFICE.

CHARLES M. KIMBALL, OF BRADFORD, MASSACHUSETTS.

IMPROVEMENT IN CAR-AXLE COUPLINGS.

Specification forming part of Letters Patent No. **198,747**, dated January 1, 1878; application filed September 18, 1877.

To all whom it may concern:

Be it known that I, CHARLES M. KIMBALL, of Bedford, of the county of Essex and State of Massachusetts, have invented a new and useful Improvement in Couplings for divided Axles of Railway-Cars; and do hereby declare the same to be described in the following specification and represented in the accompanying drawings, of which—

Figure 1 is a side elevation; Fig. 2, a longitudinal section, and Fig. 3, a transverse section of the two parts of a divided axle and my improved coupling therefor. Fig. 4 is an inner side view of one of the parts of the connecting-bearing, to be hereinafter described.

My invention consists in a coupling composed of two chambered semi-cylinders, and of a surrounding sleeve or helix shrunk or driven on them, and having a length, such as, when the wheels are fixed in place on the divided axle, will admit of it, the said sleeve, being slid or moved endwise on either division of the axle, so as to fully uncover the two semi-cylinders, in order to admit of their removal for disconnecting the said divisions.

In the drawings, A and B are the two parts or shafts of a divided axle, each of which, when in use, is to have a car-wheel fixed to it, at or near its outer end. At its inner end each of such parts has a cylindrical head, *a*. These heads are arranged in two chambered semi-tubes, C C′, which, when together, encompass the heads and the shafts A B for a short distance from each of the heads. To hold the two parts of the box in conjunction and open the shafts, I employ a tube or sleeve, D, made of a flat bar of metal bent in a helix, as shown. By so forming the sleeve, the grain of the metal is made to run in a direction around the box, whereby the sleeve is rendered much stronger than it would be were the grain to run longitudinally in it. The helical sleeve can be heated and shrunk on the box without that danger of breaking the sleeve while it is in the process of contracting upon the box which is incident to a sleeve having the grain running lengthwise of it. Each semi-tube, C or C′, has a chamber or broad groove formed crosswise in it, as shown in Fig. 4, such being to receive the two heads *a a*, in manner as shown in Fig. 2, each head, with its shaft or axle portion, being free to revolve in the two semi-tubes. Thus each of the shafts can revolve within the box independently of the other, whereby each wheel can so revolve, especially while the two may be running on a curve of a railway.

I do not claim what is termed a divided axle, composed of two shafts coupled together, so that one can turn independently of the other.

Nor do I claim, in such an axle, a sleeve to encompass the coupling and the two divisions and to extend from one wheel nearly to the other; such being as shown in the United States Patent No. 14,747, in which case the sleeve cannot be moved so as to uncover the coupling while the wheels are fixed on the axle. With my improvement there is no necessity of removing a wheel from the axle to effect uncoupling of the two parts of the axle. The helix is better than a solid tube for a sleeve, as it will accommodate itself to and fit tight on the parts circumscribed by it.

Nor do I claim a shaft-coupling, constructed as represented in the United States Patent No. 34,769, for in such construction neither shaft can revolve in the coupling independently of the other, the two being held by a tongue and grooves from revolving within the coupling. In my improved construction, each axle portion, A or B, can turn in the chambered tubes C C′ independently of the other, as before mentioned. Furthermore, the shaft-coupling of the said Patent No. 34,769 has no helix about the semi-tubes, as in my axle-coupling; such helix being productive of advantage over a simple solid sleeve.

I claim—

1. My improved divided axle-coupling, consisting of the two semi-tubes, chambered as described, and of a surrounding helix, driven or shrunk upon them, all being substantially as set forth.

2. In combination with the axle portions A B and the semi-tubes C C′, constructed and applied as described, a sleeve, D, separate from each of the said axle portions, and driven on such cylinders and having a length to enable it to be moved endwise off them when the wheels are fixed on the axle, all being as specified.

CHARLES M. KIMBALL.

Witnesses:
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JOHN R. SNOW.