J. ARMSTRONG.

Car Axle.

No. 87,818. Patented March 16, 1869.

Fig. 1.

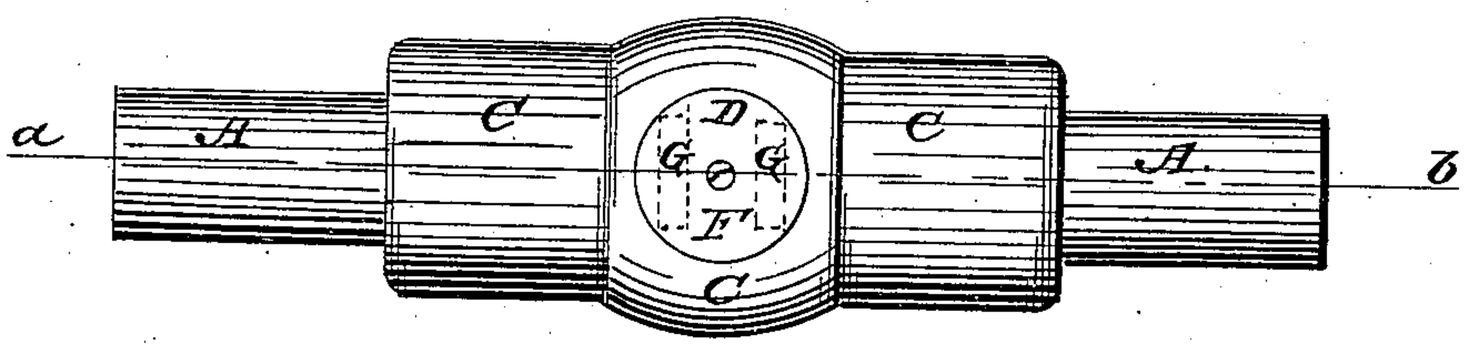


Fig. 2.

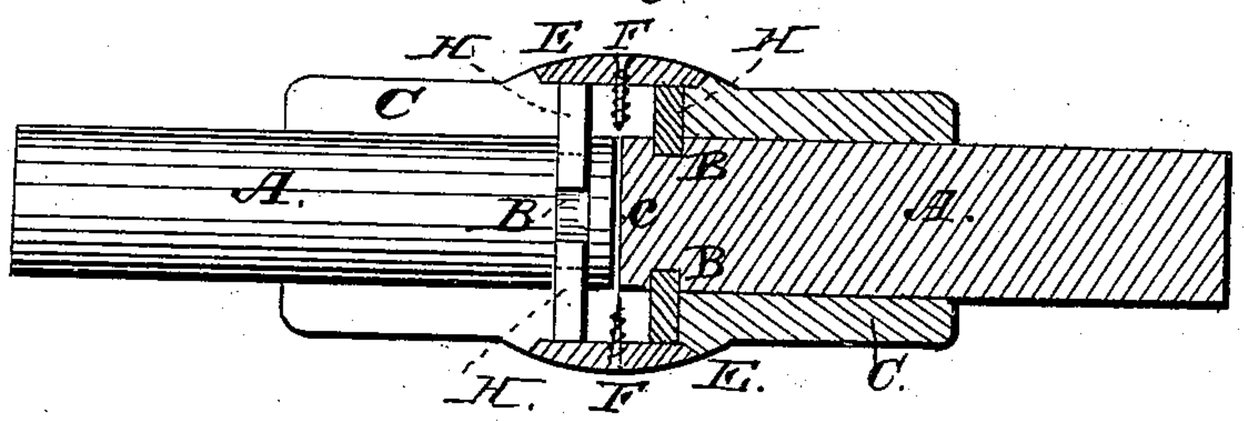
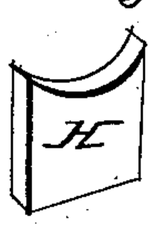


Fig. 3



Witnesses

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JOHN ARMSTRONG, OF NEW ORLEANS, LOUISIANA.

Letters Patent No. 87,818, *dated March* 16, 1869.

IMPROVED RAILWAY-CAR AXLE.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, JOHN ARMSTRONG, of the city of New Orleans, parish of Orleans, and State of Louisiana, have invented a certain new, useful, and improved Sectional Axle for City-Railroad Cars; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification.

The object of my invention is to avoid the rapid wear and destruction of the curves of city-railroads, both of the rails and the wheels of the cars, that are necessarily incident to the rigidity of the axles of the latter, and the consequent necessity that both wheels, on any given axle, shall rotate at the same speed, without reference to the length of the rails upon the two sides of the truck, and also to allow of the starting of a car, on a curve of the road, with the same ease as upon a perfectly straight section or part of the same.

To accomplish these objects, I divide the axles into two parts, or sections, at or near the centres thereof, and hold them together by means of an encircling coupling-block, or sleeve, and peculiarly-formed keys, that are fitted in the same, and penetrate into two annular grooves that are cut around the two sections of the axles, near the two extremities thereof, which are joined together to make a complete axle. Hence,

My invention consists of a division of the axles of a car into two parts, or sections, the making of annular grooves near the point of division, when these parts are united and held together by an encircling sleeve, or coupling, in such a manner as to allow of the rotation of each section, with the wheel on it, independently of the other section and wheel.

But my invention will be better and more quickly understood by referring to the drawings, on which the same letters denote the same parts at all the figures.

A, at Figures 1 and 2, represents portions of a car-axle, that is divided at *c*. I do not show an entire axle nor the wheels of a car on the drawings, because no delineation of the same is necessary to a clear understanding of my invention.

Near the extremities of these two portions, or sections of a divided axle, annular grooves, B, are sunk or cut around the same, as shown.

Over these ends, the coupling-block, or sleeve C, is closely but smoothly fitted, in such manner, that whilst each section of the axle will revolve readily and easily within it, and without reference to the other section, both parts will yet be held steadily and firmly in the same line with each other.

At the centre of the sleeve C, on opposite sides thereof, two shallow circular recesses, D, are made, in which caps, or covers, E, are fitted, and held in place by screws or bolts, F.

At the bottom of these recesses D, the key-holes G are provided, for the reception of the keys H, which, being inserted, are held in place by the caps E.

Fig. 1 is a top view of my invention, as when ready for use, except that the cap E is left off, in order to show the key-holes G, their proximate size, and relation to each other.

At fig. 2, the right-hand half of the figure shows a section of the sleeve, and of the section of the axle that enters within the same, through the line *a b* of fig. 1, whilst in the left-hand half, the bisection is only through the sleeve, the axle being shown in undivided form, in order to exhibit the extent of the encircling clasp of the keys over the axle at the bottom of the grooves B B.

To secure such encircling clasp, the feet, or inner ends of the keys H, are made of concave form, as is clearly shown by the perspective view of one of them, which is given at Figure 3.

The penetration of the keys H is not sufficient to bring either of the two that take into the same groove, in contact with each other, and hence they can always be kept close against the bottom of the grooves, as they wear away, by the introduction of backing at their outer extremities, which will be held in place by the caps E.

My invention may be applied to every existing car-axle, by simply cutting the same into two parts, making the necessary encircling grooves, and uniting the two parts by means of sleeve C, provided with keys H, as described.

And inasmuch as each wheel of a car, that is provided with my improvement, revolves upon its own axis, and independently of the other wheel, it will be perceived at once that the objects sought by me are completely accomplished, to wit, the saving of the wheels of the cars, and the rails of the road, at the curves thereof, from the rapid wear resulting from the severe friction that is consequent on the slipping or sliding of the wheels on the outside, or longest rail at a curve, when the wheels on both sides of the car rotate alike, or the same number of times, in passing over any given distance, as must necessarily be the case when the axles are in one piece, as they are now universally made, and the making it as easy to start a car from a state of rest on a curve, whatever the radius of the arc thereof, as it is on a section of the road that is perfectly straight.

Having thus described my invention,

What I claim, and desire to secure by Letters Patent, is—

The arrangement of a sleeve, or coupling-block, C, at the point of division of a sectional car-axle, to hold the two sections together by means of the keys H and the grooves B, when these parts are severally combined, constructed, and operate as herein described, and the said keys H are held in place by covering-caps E, and are kept in close contact with the bottom of said grooves B, as they wear away by use, by means of backing, as herein set forth.

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Witnesses:

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