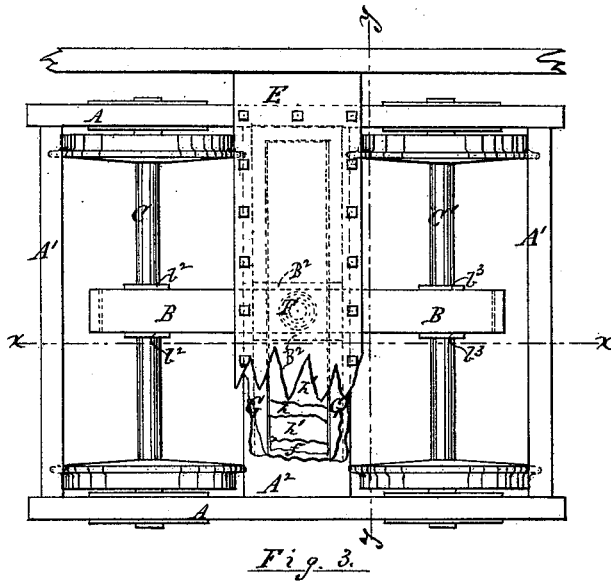
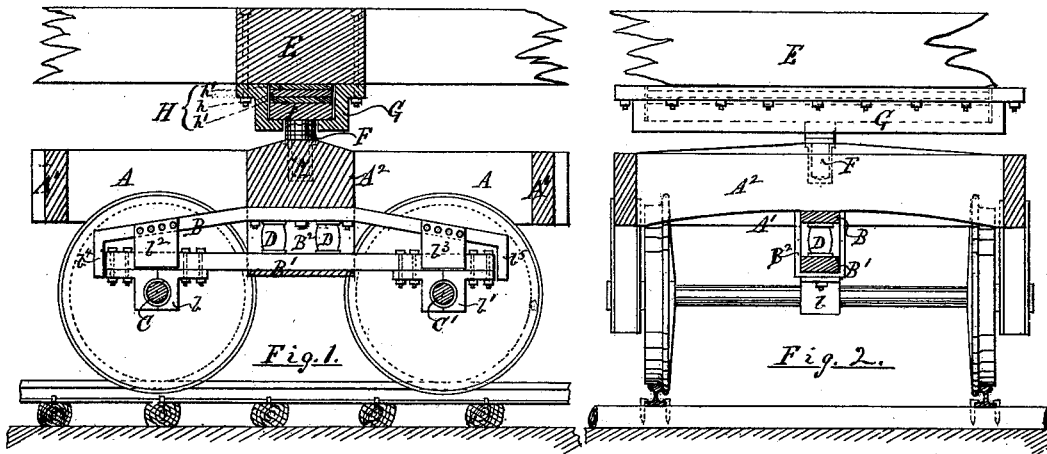


F. W. SCHROEDER.  
Car-Truck.

No. 213,840.

Patented April 1, 1879.



Witnesses  
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# UNITED STATES PATENT OFFICE.

FREDERICK W. SCHROEDER, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF HIS RIGHT TO ADOLFO HEGEWISCH AND DOMINGO M. MONJO, OF SAME PLACE.

## IMPROVEMENT IN CAR-TRUCKS.

Specification forming part of Letters Patent No. 213,840, dated April 1, 1879; application filed October 7, 1878.

### *To all whom it may concern:*

Be it known that I, FREDERICK WILLIAM SCHROEDER, of the city, county, and State of New York, have invented a new and useful Improvement in Railway-Car Trucks, of which the following is the specification:

The object of this invention is to construct a car-truck in such a manner as to prevent the transmission of shocks to the car, which would occur by the passing of the wheels over asperities of the track, and also to guard against the derailment of the truck by the breakage of an axle.

The nature of the invention consists in providing a laminated cushion of india-rubber, and some suitable elastic covering of the same, which shall be interposed between the bearing of the car and its supporting truck-frame in such a manner as to intercept and absorb the shocks of the truck-frame.

A central support or bearing for the axles is also provided for each truck, the said support being also cushioned against the above-mentioned laminated cushion, and the shocks transmitted through it being intercepted and absorbed by the said cushion, as well as the shocks transmitted from the wheels through the journal boxes or bearings proper.

The invention will be readily understood by reference to the accompanying drawings, of which Figure 1 is a longitudinal sectional elevation of one of the improved trucks, taken on the line *xx* of Fig. 3. Fig. 2 is a transverse sectional elevation of the improved truck, taken on the line *yy* of Fig. 3. Fig. 3 is a general plan of the truck.

The side and end beams  $A^1$  of the truck-frame may be of the usual or any approved form of construction. The central transverse or bearing beam  $A^2$  will, as is ordinarily the case, be constructed to receive and sustain the weight of the car.

Centrally located beneath the bottom of the beam  $A^2$ , and secured to it, will be a longitudinal auxiliary frame or truss,  $B^1$ , the lower side of which, near its ends, will carry bearing-boxes  $b$  and  $b^1$ , which will provide bearings for the central parts of the axles  $C$  and  $C'$ . Thus supported, if either of the axles should

become broken the central bearing would support the longer end of the broken part, and thus prevent the broken axle from catching in the ground or on the ties, and the almost inevitable derailment of the car.

The bearing-boxes  $b$  and  $b^1$  need not fit the axle so tightly as to form bearings for the axles when all of the parts are perfect, but only to embrace the said axles loosely, and in such a manner as to instantly supply the needed support in case of breakage; but, of course, the central bearing-boxes may, if desired, be so constructed as to supply constant bearings for the axles. These auxiliary frames or trusses will preferably be formed of a top or truss beam,  $B$ , which will be securely bolted to the bottom of the transverse beam  $A^2$ , and a bottom loose beam or follower,  $B^1$ , secured to or in place with the fixed beam by means of the side guides,  $b^2$  and  $b^3$ , and the end guides,  $b^4$  and  $b^5$ , the construction of these parts being such as to permit the lower or follower beam free vertical play as governed by the connecting-axles and the interposed springs  $D$   $D$ .

Between the transverse beam  $A^2$  of the car-truck and the transverse bearing-beam or bolster  $E$  of the car-frame will be interposed the king-bolt or turn-table pivot-pin  $F$ , the lower end of which will find its socket in a suitable step-plate embedded in the beam  $A^2$ . A suitable socket-plate or housing-piece,  $G$ , will be securely bolted to the bottom side of the beam or bolster  $E$ , and will embrace and hold in place the head  $f$  of the king-bolt or pivot-pin  $F$ . This piece  $G$  will simply act as a lateral guide and stay for pin  $F$ , while the whole weight of the car and its contents will be superimposed on the head  $f$  of the pin  $F$ . There will, however, be interposed between the bolster-piece  $E$  and the head of the pin  $F$  a laminated cushion,  $H$ , which will receive all of the concussions from the truck-frame that would otherwise be transmitted to the car. This laminated cushion will not only receive the concussions that will arise by reason of the wheels passing over asperities of the track, and thereby ease the wear both upon the road-bed and the rolling-stock, but will also largely absorb the sound-waves imparted to the air by reason

of such concussions, and thereby materially lessen the noise of a passing train.

The laminated cushion H is composed of a central piece, *h*, of india-rubber, and two covering-pads, *h'*, which will be formed of sheets of cork, leather, celluloid, or some other suitable covering material, which will protect the india-rubber from vulcanization or other deterioration or injury. These sheets *h'* are to be firmly secured to the sides of the india-rubber sheet *h* by some suitable water-proof cement—such, for instance, as rubber cement—thus holding the sheets or layers of this cushion firmly together, so as to form a solid laminated cushion.

The cushion H may extend continuously nearly the entire length of the bearing beam E, or it may be put in in short pieces, of, say, four or five inches, more or less, with intervening spaces of corresponding lengths.

A supporting-strap, B<sup>2</sup>, is fixed to the top beam, B, and embraces the lower beam, B<sup>1</sup>, so as to hold the latter in position in case of breakage, and thereby hold up the axle when required.

I am aware that central beams have heretofore been used in car-trucks for the support of the bearing-boxes of the inner ends of what are known as "independent axles;" but such is not my use, my explicit use of the central beams being to combine them with the central parts of the continuous axles C and C', as auxiliary supports in case of accident.

I am well aware that laminated cushions formed of sheets of india-rubber interposed between metal plates have heretofore been used below the bolster-bearing of a truck-frame; but as the india-rubber placed in contact with metal very rapidly becomes vulcan-

ized and worthless, I make no claim to such a use of india-rubber, but always use the india-rubber sheet in such a way as to protect it by some suitable elastic protecting-cushion, such as I have hereinbefore described. This laminated cushion is essentially necessary for a truck having a central support for its axles, as the shocks imparted to either of its wheels are absorbed in this cushion without liability to breakage of any of the parts of the truck. This laminated cushion, extending as it does, as above described, from side to side of the truck—*i. e.*, nearly the whole length of the bolster-piece E—affords a cushioned bearing for the ends of the pieces A<sup>2</sup> and E, and a consequent cushion for the side bearings, as well as the center of the pivot-pin F.

Having described my invention, I claim—

1. The axle-support B B' *b b'*, arranged so as to be vertically self-adjusting and applied to the centers of car-axles, as and for the purpose set forth.

2. The self-adjusting axle-support B B' *b b'*, in combination with the bearing-beam A<sup>2</sup> of the truck-frame and the central parts of the axles C C', as and for the purpose set forth.

3. The pivot-pin F, the laminated cushion H, of india-rubber, and suitable protecting-sheets of elastic material, and the supporting-beam E, combined and arranged as and for the purpose set forth.

4. The central support B B' *b b'*, and the beam A<sup>2</sup>, in combination with the pivot-pin F, cushion H, and supporting-beam E, as and for the purpose set forth.

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Witnesses:

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