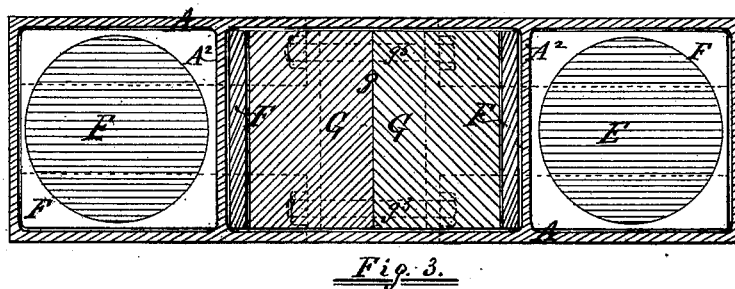
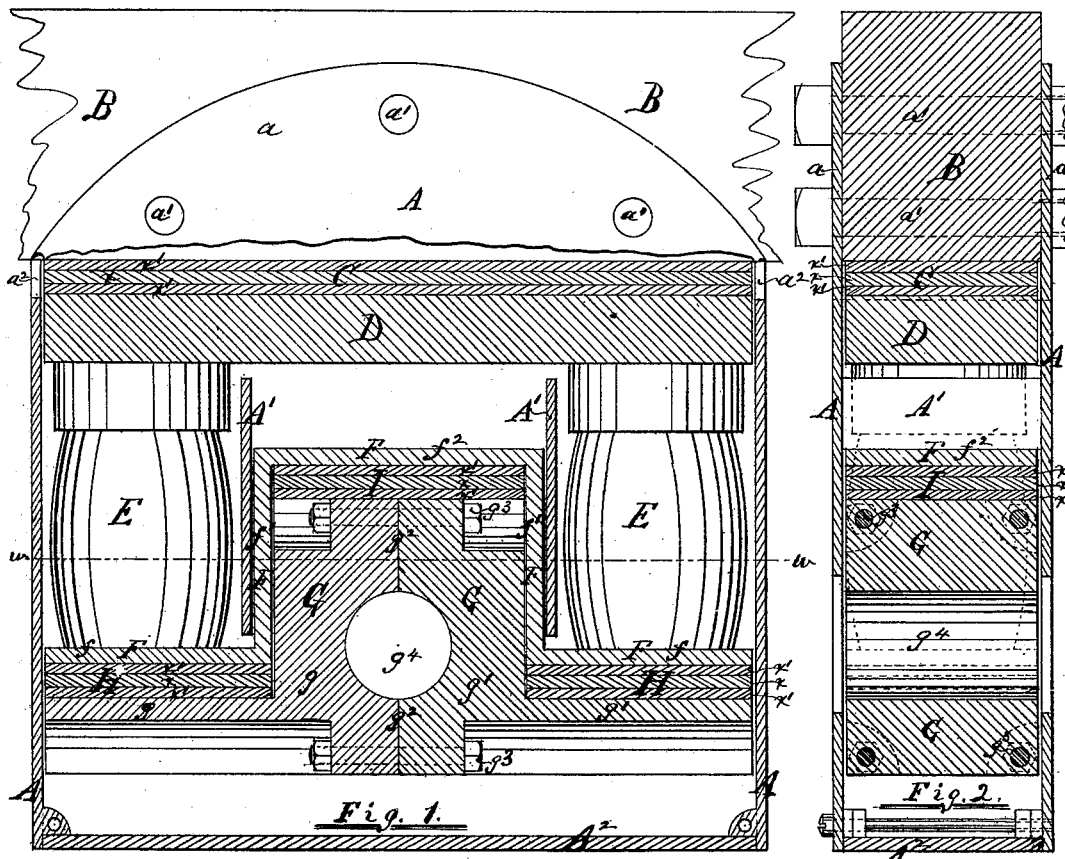


F. W. SCHROEDER.  
Car-Axle Box.

No. 213,842.

Patented April 1, 1879.



Witnesses  
M. Randall  
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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-AXLE BOXES.

Specification forming part of Letters Patent No. **213,842**, dated April 1, 1879; application filed October 3, 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 Journal-Boxes, of which the following is a full and clear description:

This invention relates to a journal-box for railway rolling-stock, constructed so as to reduce to a minimum the concussions imparted to the rolling-stock by reason of the wheels passing over asperities of the track.

The invention consists in placing in the bearings of the journal-boxes, and between them and the truck-frames, laminated cushions, of india-rubber or some other elastic material, as will be presently fully explained. These laminated spring-cushions are to be used in addition to the ordinary truck-springs, and not in lieu of them.

The bearing-box proper is constructed in a new and improved manner, and other improved details of the construction of the housing of the box will be hereinafter fully specified.

The invention will be fully understood by reference to the accompanying drawings, of which—

Figure 1 is a sectional elevation of one of the improved boxes, together with its full housing or stand, with the exception of the front of the casing, which is removed, so as to disclose the interior parts. Fig. 2 is a transverse section of the parts shown in Fig. 1, this view being taken on the axial line of the car-axle. Fig. 3 is a sectional plan of the improved box, taken on the line *w w* of Fig. 1.

The casing or housing A A is simply a cast-iron box, the top end of which will preferably terminate in two vertical flanges, *a a*, which will be arranged to embrace the side beam of the truck-frame, to which it will be secured by means of bolts passing through the holes *a'* in the said flanges. The side plates of the casing will be terminated at their upper ends a short distance below the truck-beam seat, so as to leave an opening of half an inch, more or less, at *a''*, between the said side plates and the bottom edge of the truck-beam, for the purpose of preventing contact between the

sides or ends of the housing and the truck-frame, and the consequent transmission of shocks from the wheel to the truck-frame through solid bodies, as would otherwise be the result.

Immediately below the truck-beam B, and within the casing A, is placed a laminated cushion, C, the construction of which will be presently explained. All of the weight of the car will rest upon these cushions C. Immediately below the cushions C will be placed a metallic follower-plate, D, which will nearly fill the interior of the casing A, but which will be arranged so as to easily rise and fall within the said casing, as may be required for the full action of the laminated spring-cushion C. Immediately below the ends of the plate D, and resting against it, will be the ordinary truck-springs E, of india-rubber or spiral steel coils, or any other suitable device adapted to this purpose. These springs will be located in vertical cells prepared for them between the side walls of the casing and the small vertical partition walls or guides A<sup>1</sup>.

A bent follower-plate, F, will be constructed as shown in Fig. 1, and, like the plate D, will be permitted to rise and fall easily within the case A A<sup>1</sup>. This bent follower-plate has its lower ends formed into two horizontal arms, *f*, against which the lower ends of the springs E rest, while two vertical parts, *f'*, connect these lower arms with a central part, *f''*, which is, like the parts *f*, placed in a horizontal plane. The completed follower F *f f' f''* extends from side to side of the housing A, except a small freeage, which permits it to easily rise and fall within the said housing, as may be required for the free action of the springs.

The vertical parts *f'* of the said follower-bar F will fit snugly between the vertical guide-walls A<sup>1</sup>, and these contacting surfaces will be the only parts of the interior of the casing A A<sup>1</sup> that need be finished.

The journal-box proper, G, is formed of two parts, *g* and *g'*, united together on a vertical joint, *g''*, by the screws or bolts *g'''*, and between which is formed the axle seat or bearing *g''''*. The axle-bearing *g''''* is placed about midway between the lower arms, *f*, of the fol-

lower F, and the metal forming the wearing part of the box extends upward above the said bearing, between the vertical parts  $f^1$  of the follower-plate F, as shown in Fig. 1. The lower part of the box G extends outwardly in lateral arms  $g$  and  $g^1$ , as is also shown in Fig. 1. Between these horizontal arms  $g$  and  $g^1$  of the box and the horizontal arms  $f$  of the follower-bar F are interposed laminated springs H, and between the top end of the box G and the central part of the follower-bar F is interposed a similar laminated cushion or spring, I.

The laminated cushions or springs C, H, and I are each formed of a central sheet of india-rubber, protected on both its sides by some suitable yielding material, such as cork, leather, felt, or any similar elastic material which will protect the india-rubber from injury. I prefer the use of cork sheets, however, as being the best adapted to the purpose and as yielding the best results.

The central sheet,  $x$ , of india-rubber, and the covering-sheets  $x'$ , of cork or other suitable material, are to be thoroughly cemented together between their contacting faces by india-rubber cement, or some other suitable water proof cement which will hold the different layers of these springs or cushions firmly together, so as to form solid laminated cushions of live springy material. The bottom plate,  $A^2$ , of the casing or housing will be formed of a separate piece, which will be attached to the sides of the housing by means of screws. These laminated cushions C, H, and I will receive all of the shocks or concussions occasioned by the wheels passing over the asperities of the track or road-bed, and will not only absorb most of the vibrations occasioned thereby, but the result will be to greatly diminish the shocks im-

parted to the rolling-stock, and also to the road-bed, and to increase the durability of both structures, as well as to reduce the noise of a moving train to a minimum.

These laminated cushions, interposed between the journal-box proper and the truck-frame, constitute the important feature of this invention; and the details herein described, though being probably the best mode of adapting these cushions to a car-truck, may, of course, be widely varied or modified with essentially the same result, so long as these general features are preserved.

Having described my invention, I claim—

1. The laminated springs C, formed of a central sheet,  $x$ , of india-rubber, and suitable protecting-sheets  $x'$ , of some suitable elastic material, thoroughly cemented together, so as to form a solid laminated elastic cushion, in combination with a car-wheel journal-box, substantially as and for the purpose set forth.

2. The laminated springs H and I, formed of a central sheet,  $x$ , of india-rubber, and suitable protecting-sheets  $x'$ , of some elastic material, thoroughly cemented together, so as to form a solid laminated elastic cushion, in combination with a car-wheel journal-box, substantially as described and set forth.

3. The journal-box G, formed of two pieces,  $g$  and  $g^1$ , constructed as described, and united by the fixing-bolts  $g^3$ , in combination with the follower F and the interposed cushions H and I, substantially as and for the purpose set forth.

FREDERICK WILLIAM SCHROEDER.

Witnesses:

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