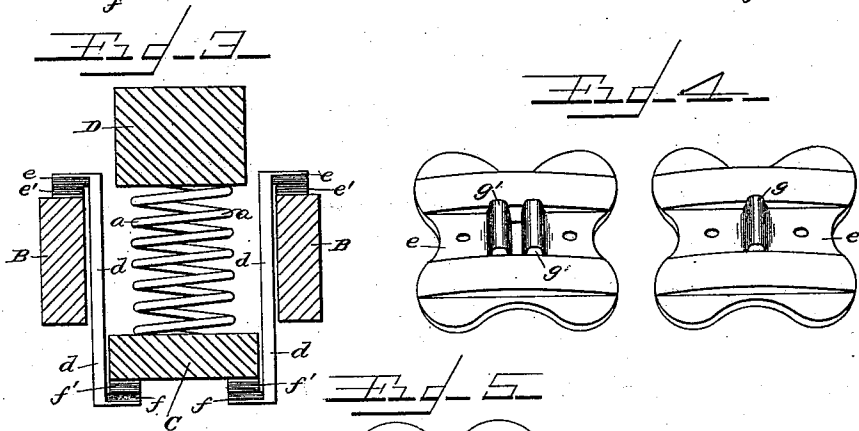
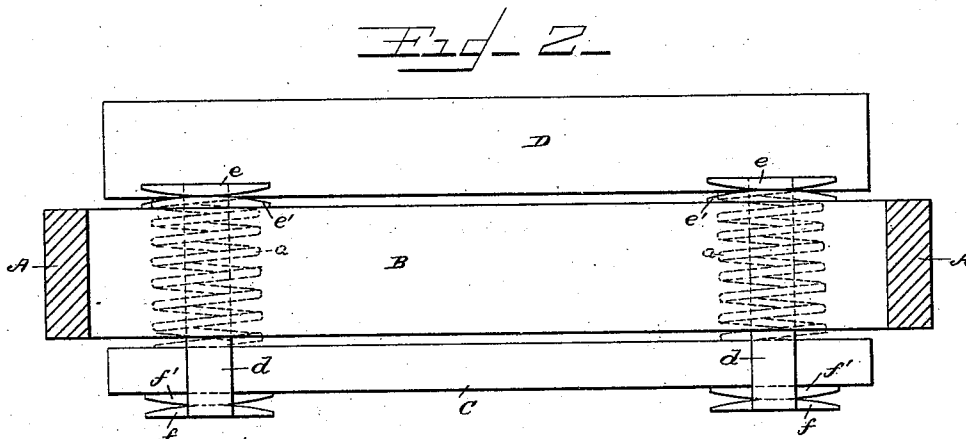
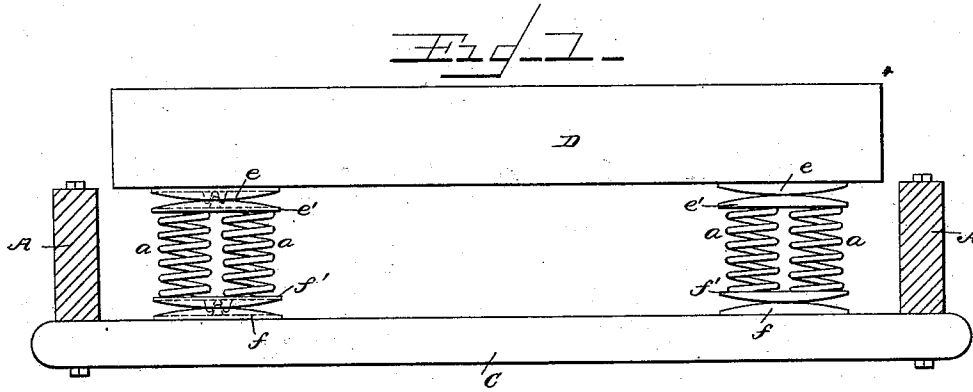


(No Model.)

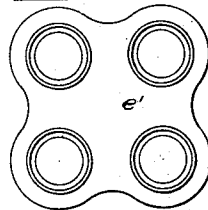
M. G. HUBBARD.
CAR TRUCK.

No. 466,349.

Patented Jan. 5, 1892.



Witnesses =
Geo. T. Smallwood
John T. Robertson



Inventor =
M. G. Hubbard,
By *H. M. Smith & Son*
Attorneys.

UNITED STATES PATENT OFFICE.

MOSES G. HUBBARD, OF CHICAGO, ILLINOIS.

CAR-TRUCK.

SPECIFICATION forming part of Letters Patent No. 466,349, dated January 5, 1892.

Application filed February 14, 1891. Serial No. 381,484. (No model.)

To all whom it may concern:

Be it known that I, MOSES G. HUBBARD, a citizen of the United States, and a resident of Chicago, county of Cook, and State of Illinois, have invented a new and useful Improvement in Car-Trucks, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification.

My invention consists in an improved rocker-bearing for cars, and is designed to be applied thereto in a manner similar to the rocker-bearings patented by me March 11, 1890, No. 423,159.

My invention relates to the construction of the bearing in the form of two curved opposing rockers, and it further relates to an improved method of holding the two surfaces together horizontally.

My improved rocker-bearings, like those described in the patent above referred to, may be applied to the spring or to auxiliary supports for connecting the upper and lower rockers, as will be more clearly seen by reference to the drawings hereto attached and which form a part of this specification, and in which—

Figure 1 represents a transverse section through the wheel-pieces of the truck, showing the spring-supporting plank and bolster and the interposed springs and rocker-bearing plates in elevation. Fig. 2 is a similar section showing the spring-plank upheld by the rocker-plates and their rigid connections. Fig. 3 represents a vertical section through the spring-plank, bolster, and truck-frame cross-sills. Fig. 4 is a perspective view of the rocker-plates detached. Fig. 5 is a face view of one of the inner rocker-plates adapted to a nest of four springs.

A A indicate the wheel-pieces of the truck-frame; B B, cross-sills connecting the wheel-pieces; C, the spring-supporting plank; D, the bolster; a a, the springs upholding the bolster from the spring-plank; e e', the upper pairs of rocker-plates, and f f' the lower pairs.

The connection between the two pairs of rocker-plates may be made vertically elastic, as shown in Fig. 1, or rigid, as shown in Fig. 2; but it will be observed that when the said connection is made elastic the circle on which the curve of the rockers is made should be

considerably larger than when rigid supports are used to cause the required gradually-increasing resistance to a continued side motion. The curve in either case should be such that the most perfect possible lateral freedom of the truck independently of the car is attained while the bearing is in a normal position and a gradually-increasing resistance to the lateral movement required to check it without concussion. There should also be provided a safe-check to limit said lateral movement and prevent any excess thereof, as shown in Figs. 1 and 2, in which the bolsters are adapted by their length to permit the desired amount of lateral movement and prevent any excess thereof by contact with the wheel-piece of the truck.

In Figs. 4 and 5 a convenient form of rocker-plates is shown adapted to be applied to a nest of four vertical coil-springs, and also the best way that I have yet found for connecting two rocker-plates horizontally. The strong cog g is formed on one plate and on the other the two cogs g' g', between which the cog g intermeshes. The cogs are made in proper form to adapt them to a pitch-line corresponding with the circle on which the rockers are formed, and will therefore hold the two rocker-plates in exact position with reference to each other horizontally without resistance to the free rocking of the rockers and are much neater than the outer rim formed around the outer edge of one rocker-plate to hold the other in position horizontally, as described and shown in my said previous patent.

In Fig. 2 the rigid connection between the upper and the lower pairs of rocker-plates is shown at d d, which are iron bars rigidly attached to the upper rocker-plates e e and to the lower rocker-plates f f. The rockers e e have their bearings on the rocker-plates e' e', which are secured to the upper edges of the cross-sills of the truck, and the rockers f f have their bearings on the lower surfaces of rockers f' f', which are secured to the under side of the spring-plank. It will thus be seen that the spring-plank C to a limited extent may vibrate laterally independently of the truck, while in Fig. 1 the spring-plank is bolted to the wheel-pieces of the truck.

These two applications of my invention will illustrate its nature and will readily suggest

any desired modification which different constructions of the car or truck may require.

Having now described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a rocker-bearing support for a car-body, the combination of two pairs of opposing rocker-plates, the opposing faces of which are curved in a direction transverse and made
10 straight or flat in a direction lengthwise of the truck, the curves of said opposing faces being formed on a circle the radius of which is greater than the distance of the two pairs of rockers apart, said rockers being kept in
15 place relative to each other by cogs located outside of their working faces, substantially as described.

2. The combination, in a car-body support, of the opposing rocker-plates having curved
20 opposing faces and arranged in pairs, one pair above another and connected one pair with the other, substantially as described.

3. The combination, in a support for a car-body, of rocker-plates arranged in pairs, one
25 pair above another, and a rigid connection between said pairs, substantially as described.

4. In a car-body support, the combination of two pairs of rocker-plates, one of each pair having a large cog intermeshing with two cogs on the opposing plate to hold said plates in
30 position horizontally with respect to each other, all of said cogs being formed to work on a pitch-line corresponding with the curve of the working faces of the rocker-plates and located outside thereof, whereby flat places or
35 the equivalent thereof on the rocker-faces are avoided, substantially as described.

5. In a rocker-bearing support for a car-body, rocker-plates arranged at each side of said body in pairs and having curved oppos-
40 ing faces provided with intermeshing cogs, the pitch-lines of which conform to the curve of said faces, whereby sliding or endwise movement of one plate on the other is pre-
45 vented, substantially as described.

In testimony whereof I have hereunto set my hand this 10th day of February, A. D. 1891.

MOSES G. HUBBARD.

Witnesses:

LEWIS LORD,

M. P. CALLAN.