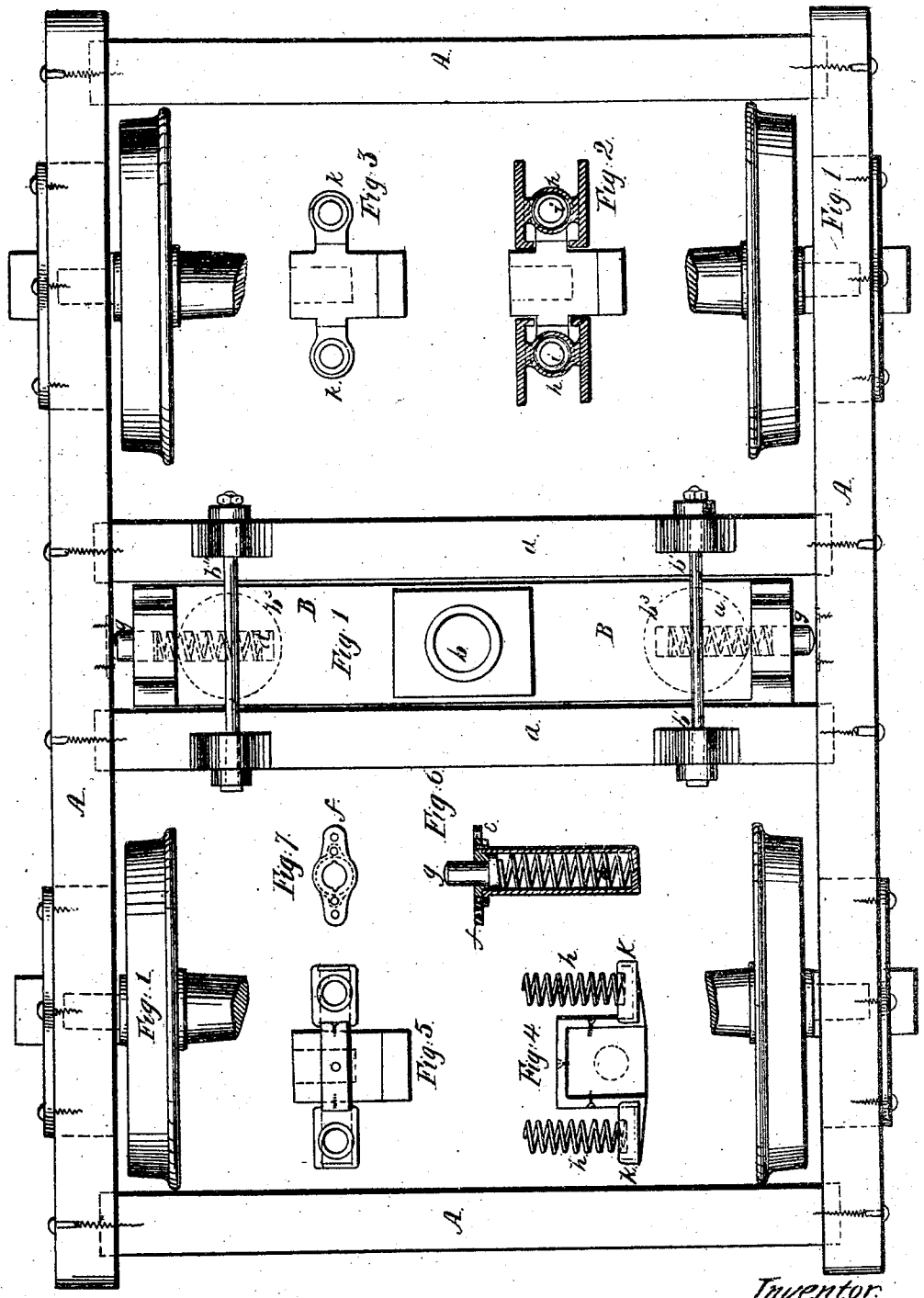
2 Sheets—Sheet 1.

P. G. GARDINER.

Car Truck.

No. 98,049. Patented Dec. 21, 1869.



Witnesses. C. R. Wagner
J. B. Hughes

Inventor.
P. G. Gardiner

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Car Truck.

2 Sheets—Sheet 2.

No. 98,049.

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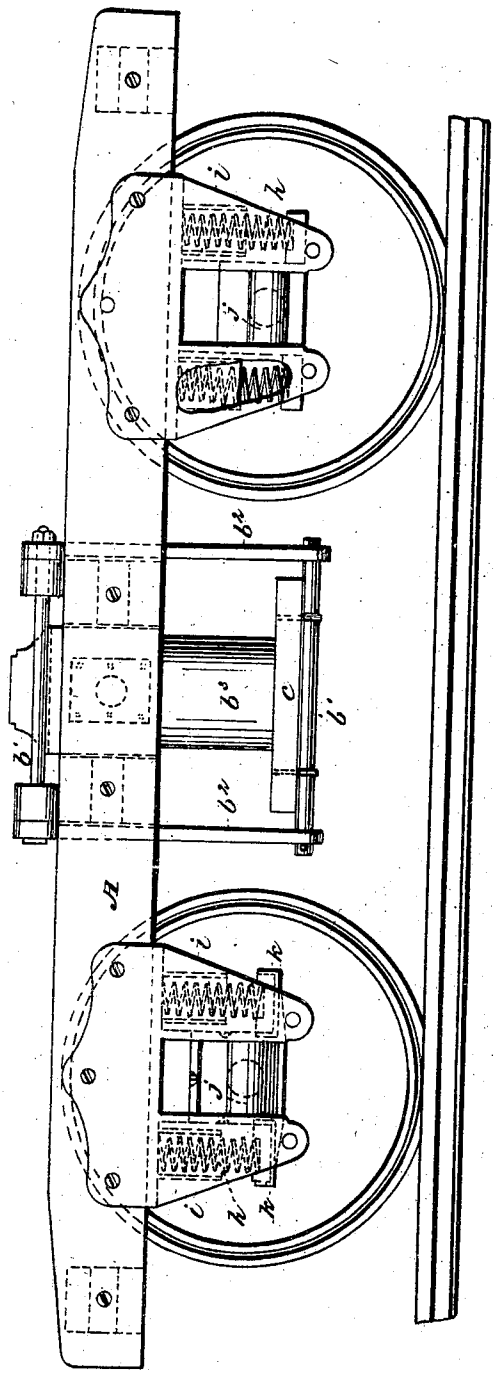


Fig. 8

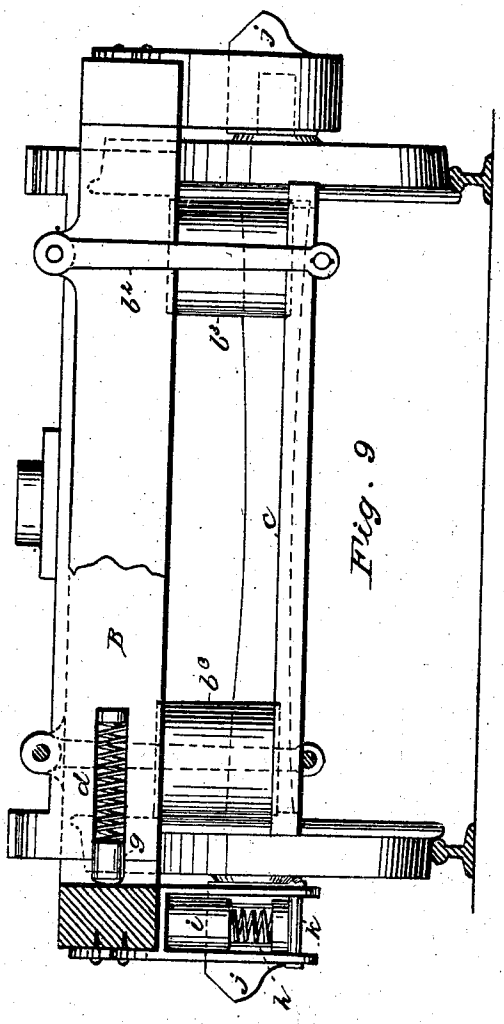


Fig. 9

Witnesses

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PERRY G. GARDINER, OF NEW YORK, N. Y.

Letters Patent No. 98,049, *dated December* 21, 1869.

IMPROVEMENT IN RAILWAY-CAR TRUCKS.

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, PERRY G. GARDINER, of the city, county, and State of New York, have invented new and useful Improvements in Railway-Car Trucks, and in the manner of constructing and attaching journal springs and their bearings; and that the following is a full and exact description of the same, reference being had to the drawings accompanying and making part of this, my specification.

The object of the first part of my invention is to soften and reduce the shock and jar resulting from the swaying of the car-body upon the bolster, by which the bolster is caused to move in a lateral direction on either side, the ends of which, striking against the side frame of the truck, as heretofore constructed, cause a violent concussion or shock; and

My invention, in this respect, consists in the combining and arranging together the springs, cases, and plungers, at the ends of the bolsters, so as, by their elastic action, to prevent such concussion or shock.

The second part of my invention consists in a peculiar combination, construction, and arrangement of the bearing-plate or table, the sockets, and the checks of the pedestal, between which bearing-table and sockets the springs are hung and supported.

The various figures and sections of the drawing will be referred to and explained particularly as the description of the invention is proceeded with.

In all the figures, similar letters represent similar parts.

The exterior frame-pieces of the truck are shown at A on Plate I, where Figure 1 represents a top view of a truck.

B is the bolster of the truck, upon which the car-body is placed, having a king-bolt passing down through it from the car-body, at *b*, the bolster being suspended and supported by the sand-board, *c*, underneath, which is held and supported by the horizontal and vertical cross-bars and rods b^1 b^2, Figures 1, 8, and 9, and which have their bearings upon the horizontal cross frame-pieces *a a*, fig. 1, the body-springs b^3, fig. 8, being interposed between the bolster and sand-board. These are constructed in the usual manner.

Between the ends of the bolster and the side frame-pieces, a space is left, in which the bolster plays or moves a short distance, from side to side, as the car-body sways from side to side in its running.

For the purpose of alleviating and softening the concussion of the bolster and of the car upon the truck-sides, I construct, arrange, and combine springs in cases, and peculiarly adapted to the object, in the manner now to be described.

These springs are made of spirally-coiled steel, and may be packed with auxiliary packing, or without.

The springs are placed in a cylindrical case, open at one end, and are shown at *d* in Figure 6, Plate I, in vertical cross-section through the centre of case and spring, and the accompanying parts. They are shown in position in the end of the bolster in dotted lines, at *d*, in fig. 1, and also in fig. 9.

Upon the open end of the case of spring *d* is a flange, *e*, and upon this is also an oblong plate, *f*, fastened upon it, and which is also fastened, by a screw or bolt, to the end of the bolster, so as to be flush with the face of the end of the bolster.

The flange *e* and plate *f* are seen in vertical cross-section in fig. 6, Plate I, and in top view in Figure 7.

Upon the outer end of the spring *d* is affixed a plunger, *g*, which passes through the plate *f* by an opening, closely fitting the plunger, and the plunger projects between the end of the bolster and the side of the truck-frame.

Upon the inner surface of the truck-frame is secured a flat plate of iron, upon which the plunger-head acts.

The outer face of the plunger is slightly rounded.

By the elasticity of the spring operating upon the plunger, the end of the plunger is always pressed upon the plate in the side frame of the truck.

The spring is so constructed and arranged, as that when first acted upon by the swaying of the car, and corresponding lateral movement of the bolster, it presents but comparatively slight resistance; but the resistance rapidly increases, so as to arrest the movement of the bolster by an elastic action, without permitting the bolster to receive a sudden and abrupt stop or shock.

By this improvement, the swaying and lateral movement of the car, while in motion and turning curves, is made easy, and more safe from accidents arising from the shock or jar of the car-body upon the truck-frame, which is often so severe in the usual construction as to lift the truck and wheels from the rails. The comfort of the passengers and the durability of the car are also much promoted by this improvement.

I now proceed to describe the second part of my invention and improvements, which are constructed, arranged, and operate as follows:

Upon the under side or face of the jaws of the pedestal, on either side of the journal-case or housing, and cast solid with the pedestal or jaws, I construct circular recesses, to surround and hold the journal-springs within them, to nearly the whole length of the springs, in a vertical position.

The springs are spiral springs.

The lower ends of these spring-sockets or recesses are open, and the spring projects below the open end sufficiently far to allow the full play of the spring, and yet not permit the open end of the case to come in contact with the bearing of the spring underneath.

These cylindrical sockets or recesses are shown with the springs therein, in side elevation, in fig. 9, Plate II, and in dotted lines, in similar elevation, in fig. 8; *h*, being the spring; *i*, the cylindrical socket containing the spring.

Upon the box or housing of the journal, and which box or housing is firmly secured to its position over the end of the axle, is cast solid with the box or housing, and underneath it, the supporting-plate or bearing, *k*, of the journal-springs, figs. 8 and 9.

This bearing-plate *k* extends and projects on either side of the housing, at its lowest point, sufficiently far to afford a base to the springs.

By this construction, the pedestal, which is fast to and supports the truck over the journal, has its bearing upon the head of the springs *h*, which are interposed between the pedestal and the bearings, *k*, of the journal-case or housing, as before described.

This arrangement and construction dispenses with the heavy equalizing-bar generally used for the journal or truck-springs, and allows the requisite greater action of the journal-springs, which cannot be obtained when the journal-springs are placed directly over the journal, and, at the same time, secures the advantage and safety of hanging the car lower upon the axles than by any means heretofore used, thus adding to the safety of the car, and saving the weight and expense of the equalizing-bar, and also giving an increased space for the play for the springs.

Figures 2 and 3, Plate I, are horizontal cross-sections of the pedestal, and circular recesses, and springs within them, and of the housing, and a top view of the housing, and the parts attached, which furnish a bearing to the journal-springs.

Having thus described my improvements, and the manner of constructing the same.

What I claim therein as my invention, and for which I desire Letters Patent, is

1. The combination of the springs *d* with the cases and the plungers or spring-heads, constructed and operating as described. I also claim, particularly, as my invention, the construction of a bolster-buffer or spring, made with a projecting head or plunger, to act upon the plated face of the side-truck frame-piece, in the manner and for the purposes described.

2. The combination of the springs, the bearing-plate or table, and the sockets for supporting and carrying the springs within the checks of the pedestal, constructed, arranged, and operating in the manner and for the purposes described.

P. G. GARDINER.

Witnesses:

J. B. STAPLES,

C. PH. WAGNER.