

F. S. HARRINGTON.

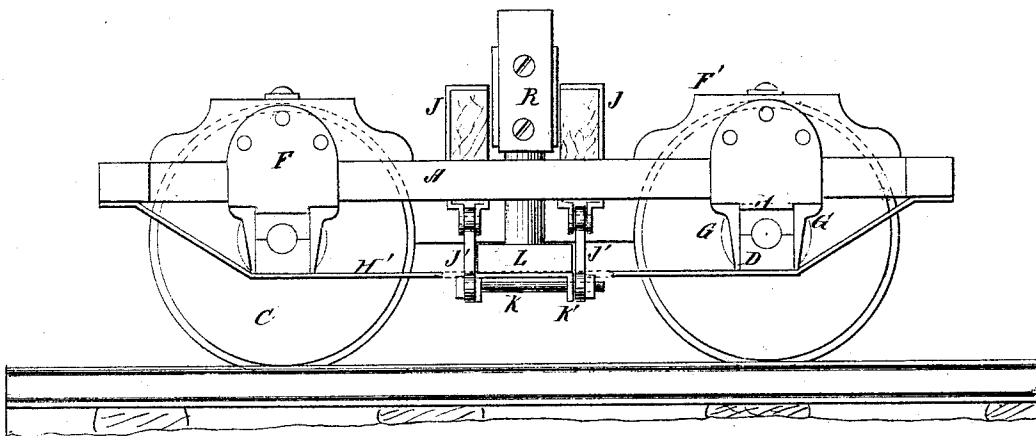
3 Sheets—Sheet 1.

Railway Car Truck.

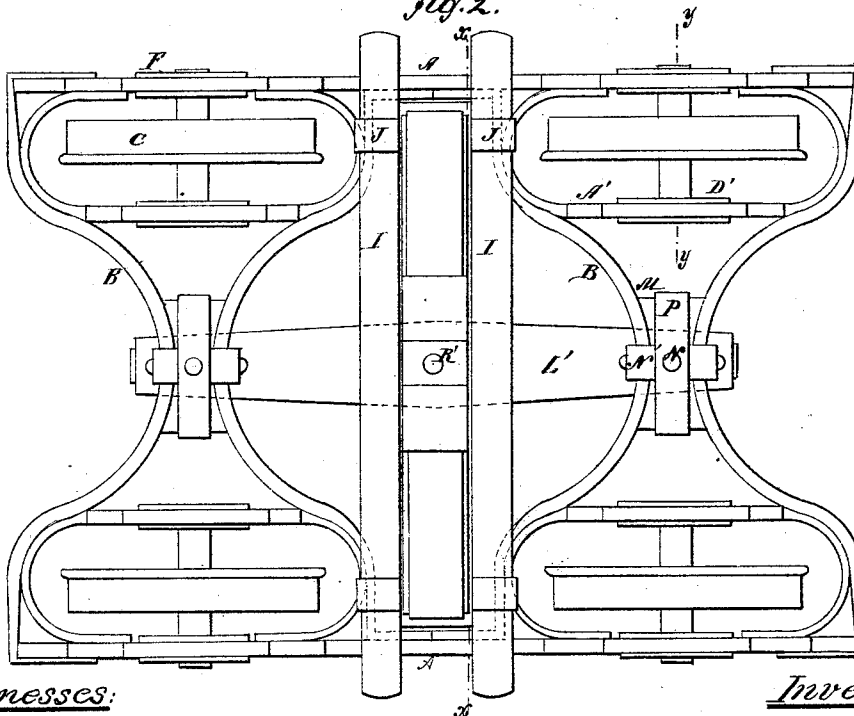
No. 113,878.

Patented April 18, 1871.

*fig. 1.*



*fig. 2.*



Witnesses:

*Victor Hagmann*  
*John C. Irine.*

Inventor.

*Francis S. Harrington*

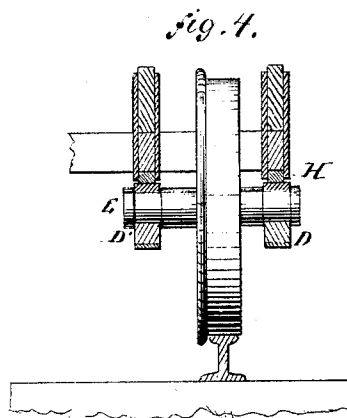
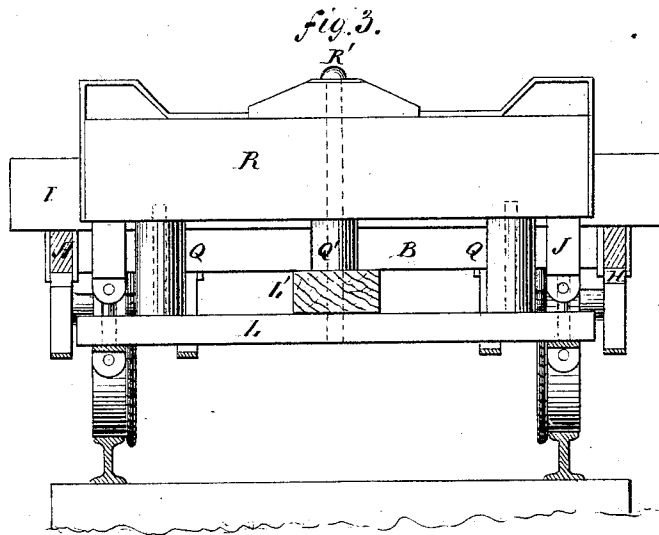
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John C. Trine.

Inventor:

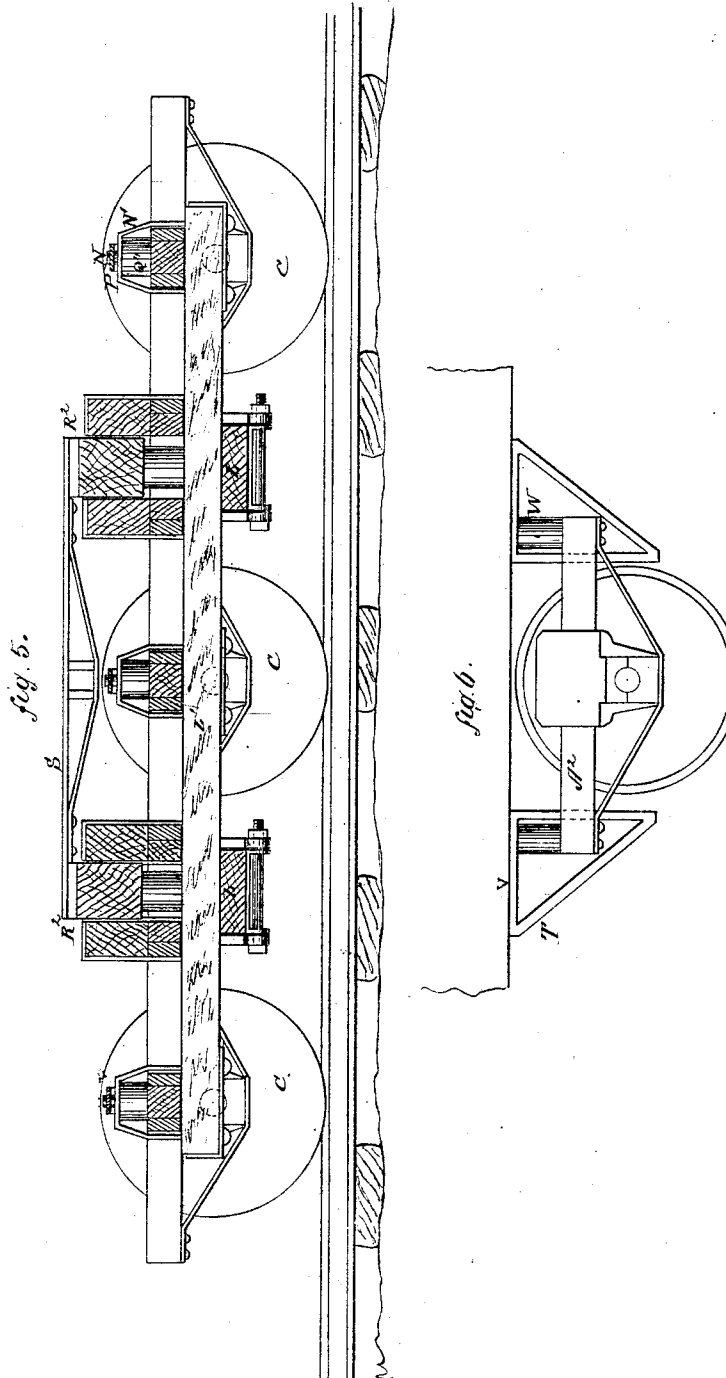
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# United States Patent Office.

FRANCIS S. HARRINGTON, OF BOSTON, MASSACHUSETTS.

Letters Patent No. 113,878, dated April 18, 1871.

## 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, FRANCIS S. HARRINGTON, of Boston, Suffolk county, in the State of Massachusetts, have invented certain new and useful Improvements in Railway-Car Trucks; and I hereby declare the following to be a full and exact description thereof, reference being had to the accompanying drawing forming part of this specification.

The nature or essence of my invention consists in the particular construction and arrangement of devices forming the improvements in car-trucks described in the following specification and represented in the drawing.

In the accompanying drawing—

Figure 1 is an elevation of one side of a car-truck with my improvements.

Figure 2 is a plan or top view of the same.

Figure 3 is a cross-section on the line *x x* of fig. 2; and

Figure 4 is a cross-section on the line *y y*.

Figure 5 is an elevation of a six-wheel truck with my improvements.

Figure 6 shows the mode of attaching my improvements to cars for street railways.

In the above-mentioned drawing *A A* are the side beams, connected by the cross-frames *B B*, which are firmly fastened to the side beams to form a strong frame, to which most of the other parts are either fastened or connected.

These cross-frames *B B* resemble, in form, the section of an hour-glass, or the numeral figure 8.

The openings in the ends form the spaces in which the wheels *C C* turn, as shown in fig. 2.

The forked frames or stands which carry the journal-boxes *D D* of the axles *E E* may be made in the form shown in the drawing—that is, with two plates, *F F*, projecting up, one on each side of the beam *A*, and far enough above it to receive the block *F'*, to which the plates are bolted to hold the stand firmly on the beam *A*.

The forks or prongs *G G* project down in the grooves of the journal-boxes *D* to hold them in place and permit them to traverse, as the rubber spring *H*, between the box and the beam, is compressed by the load on the car.

The bar *H'* passes under the prongs *G* of two stands, and its ends are bent and fastened to the beam *A* to brace the prongs, as shown in the drawing.

To carry the boxes *D'* from the inner ends of the axles *E*, I fasten the beams or bars *A'* in the frames *B*, parallel to the beams *A*, and bend their ends around and fasten them to the beams *A*, as shown in the drawing.

To these bars *A'* the stands are fastened to carry the boxes *D'*, and the prongs of each stand are connected and braced by a bent bar, with its ends fastened to the bar *A'*.

The carrying bars *I I* are laid across the top of the frame and secured by notches or spikes to prevent them from slipping endwise, and some clevis-straps, *J J*, are put over them, and pass down each side of one of the arms of the frames *B*, and are connected to links *J' J'*, which carry the bolt *K* and stand *K'* to support the cross-bar *L*, which lies upon and is fastened to the stand *K'*.

I fasten some blocks, *M*, in the centers of the frames *B B*, and set a pin, *N*, in the center of the block, and put a rubber spring, *Q*, around it, and put the bow of the clevis *N'* on the pin *N*, over the spring, with its arms extending down through the lineal bar *L'*, which lies lengthwise of the truck, across the bar *L*, as shown in fig. 3; and to hold the pin *N* upright I put the bent strap *P* across the top of the clevis *N* and fasten the ends to the block *M*.

I set two pins in the cross-bar *L*, and put the rubber springs *Q Q* around them, and make a hole at the intersection of the bars *L* and *L'* for the transom-bolt *R'*, and set the spring *Q'* around it.

I then perforate the rocker-beam *R* for the ends of the pins in the springs *Q Q* and for the transom-bolt *R'*, and put the rocker-beam on the pins, between the carrying bars *I I*, when the truck is ready to receive the car.

By fastening the lineal bar *L'* to the cross-bar *L* and hanging the lineal bar *L'* to the centers of the frames *B B*, as shown and described, the lineal bar limits to some extent the sidewise swing of the cross-bar.

By arranging a separate axle for each wheel the friction and resistance in turning curves is very much reduced, and the axles rendered less liable to be broken by torsion.

In fig. 5 of the drawing I have illustrated the mode of applying my improvements to six-wheeled trucks by the use of two rocker-beams, *R<sup>2</sup> R<sup>2</sup>*, connected by the strong bridge-piece *S*, to receive the weight of the car.

In fig. 6 I have shown the mode of adapting my improvements to cars for street railways by the use of a short side beam, *A<sup>2</sup>*, and stands, *T T*, fastened to the sill *V* of the car, in which stands the springs *W W* are placed near the ends of the beam *A<sup>2</sup>* on the frame of the truck, about or over the rail track, in addition to the spring over the journal-bar of the axle.

I contemplate that most or all the kinds of metal springs may be used instead of rubber.

I also contemplate that my improvements in truck-frames may be used with a single axle, for two wheels, by omitting the inside journal-boxes and placing the bar L', under the bar L, below and out of the way of the long axle.

The parts B B in the above-described truck-frames may be made of metal, and the side beams A A of wood or metal.

Having described my improvements in trucks for railway cars,

I will now state what I desire to secure by Letters Patent—

1. The transverse frames B B, constructed as shown, and secured to the side frame A, the whole being arranged as and for the purpose set forth.

2. The bent bars A', secured to the transverse frames B and side frames A, as and for the purpose set forth.

3. The longitudinal supporting-bar L', hung to the transverse frames B by the clevises N' and springs Q', as and for the purpose set forth.

4. The swing-beam L, in combination with the longitudinal supporting-beam L', constructed and arranged substantially as and for the purpose set forth.

FRANCIS S. HARRINGTON.

Witnesses:

J. DENNIS, Jr.,

T. C. CONNOLLY.