J. P. LAIRD.

Car Truck.

No. 51,063. Patented Nov. 21, 1865.

Fig. 2.

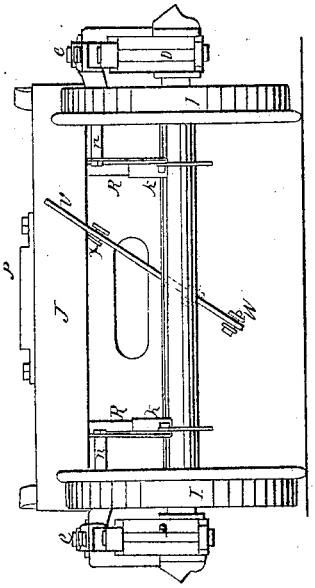
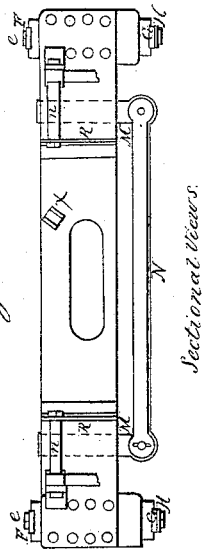


Fig. 5.



Sectional Views.

Fig. 6.

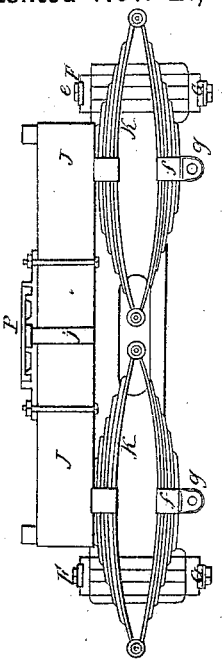


Fig. 8.

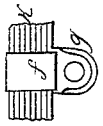


Fig. 1.

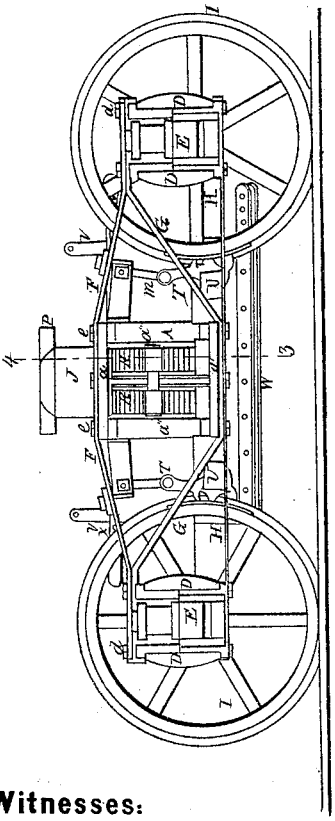
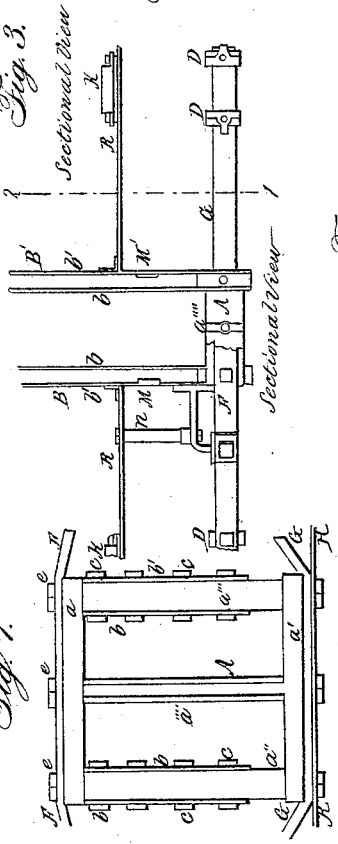


Fig. 3.



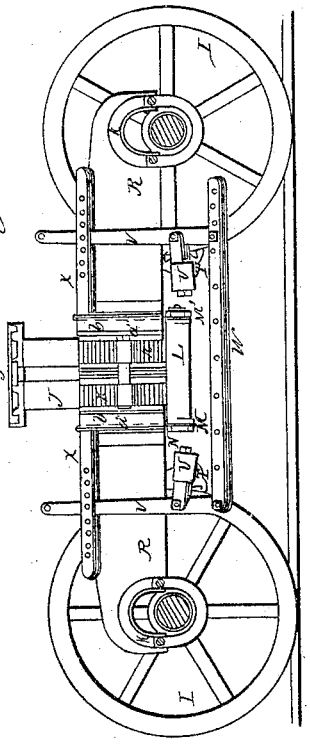
Sectional View

Sectional View

Fig. 7.



Fig. 4.



Witnesses:

Wm. Albert Steele
John Parker

Inventor:

J. P. Laird
By his Atty
F. H. Howson

# UNITED STATES PATENT OFFICE.

JOHN P. LAIRD, OF ALTOONA, PENNSYLVANIA.

## IMPROVED RAILROAD-CAR TRUCK.

Specification forming part of Letters Patent No. **51,063**, dated November 21, 1865.

*To all whom it may concern:*

Be it known that I, JOHN P. LAIRD, of Altoona, Blair county, Pennsylvania, have invented an Improved Metal Truck for Locomotives, &c.; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention consists in constructing trucks for locomotives and cars of iron as described hereinafter, in order that they may be lighter, stronger, and more durable than trucks made partly of wood and partly of iron.

In order to enable others skilled in the art to make and use my invention, I will now proceed to describe its construction and operation.

On reference to the accompanying drawings, which form a part of this specification, Figure 1 is a side view of my improved metal truck for railway-cars; Fig. 2, an end view; Fig. 3, a plan view, partly in section, of a portion of the truck; Fig. 4, a longitudinal section; Fig. 5, a transverse section on the line 1 2, Fig. 3; Fig. 6, a transverse section on the line 3 4, Fig. 1, and Figs. 7 and 8 detached views of parts of the truck drawn to an enlarged scale.

Similar letters refer to similar parts throughout the several views.

The main portion of the frame of the truck consists of the side castings, A, and the transverse beams B and B′, the peculiar construction of which it will be necessary to describe in the outset.

Each of the pieces A is a frame composed of the upper and lower horizontal portions, *a* and *a′*, and the vertical portions *a″*, *a‴*, and *a⁗*, the whole being cast in one piece and arranged in the manner best observed on reference to Fig. 7.

Each of the transverse beams B and B′ is composed of two plates of sheet-iron, with an intervening packing of wood, each beam being secured at each end to one of the vertical portions *a″* or *a‴* of the piece A by bolts *c c*, the two plates of the beam fitting, if deemed necessary, into recesses, one in one side and the other in the opposite side of one of the said vertical portions of the side castings, A.

D D are the guides, in which slide the usual axle-boxes, E, (see Fig. 1,) these guides being fitted above to the inclined bar F and diagonal brace G, and below to the horizontal bar H, and the whole being secured together by bolts *d*, passing through the guides.

The inclined bar F is fitted to the top of the piece A, and the diagonal brace G and horizontal bar H to the under side of the said piece A, to which the several bars are secured by the three bolts *e e e*, one of which passes through each of the vertical portions *a″*, *a‴*, and *a⁗* of the side castings, A.

The truck is furnished with the usual axles and flanged wheels I.

J is the bolster, which rests on two pairs of elliptical springs, K, as seen in Figs. 4 and 6, a portion of the said springs projecting through the side castings, A, of the frame. The lower bands, *f*, of each pair of springs fit in sockets formed in a bar, L, Figs. 4 and 8, which serve to connect the two hangers M M′ together, each hanger being permanently secured to the inside of either the inner or outer plate of each beam, and having on the top a lip overhanging and bearing on the upper edge of the plate.

The two pairs of hangers are connected together by horizontal rods N N.

P is the usual center plate, secured to the bolster, and *j* the hole in the latter for receiving the king-bolt.

R R are safety-beams, secured to the transverse beams and terminating in a bearing, *k*, adapted to and situated above the axle, but free from contact therewith at all times, excepting when an axle accidentally breaks.

T T are the brake-shoes, each of which is hung by a link to a pin, *m*, secured at one end to the frame of the truck and at the opposite end to one of the safety-beams, as seen in Fig. 3, two of the shoes being connected together by a brake-beam, U, and to each brake-beam is jointed a lever, V, the short arms of the two levers being connected together by two bars, W, and the upper arm of each lever operating in guides X, projecting from one of the transverse beams of the frame.

The levers are connected to the usual braking-tackle.

A truck made of metal in the manner described above is much lighter than an ordinary truck. At the same time it is much superior to the latter as regards durability and strength.

I claim as my invention and desire to secure by Letters Patent—

1. The main frame composed of the cast-iron pieces A A and plate-iron transverse beams B B′, the whole being constructed substantially as described, for the purpose specified.

2. The combination of the above with the bars F and H, braces G G, and the guides D and D′ or their equivalents, for the reception of the axle-boxes.

3. The cast-iron bar L, having sockets for the reception of the spring-bands *f f*, in combination with the permanent hangers M M′.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JNO. P. LAIRD.

Witnesses:
H. HOWSON,
W. W. DOUGHERTY.