

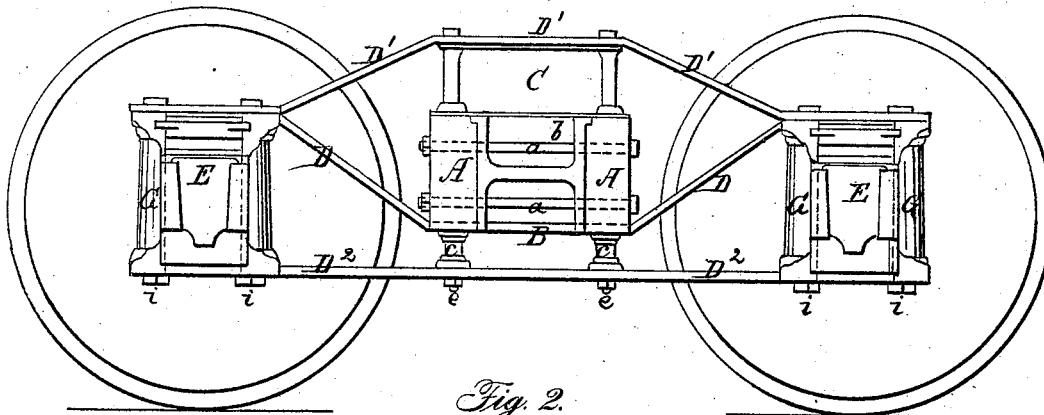
C. F. ALLEN.

Car Truck.

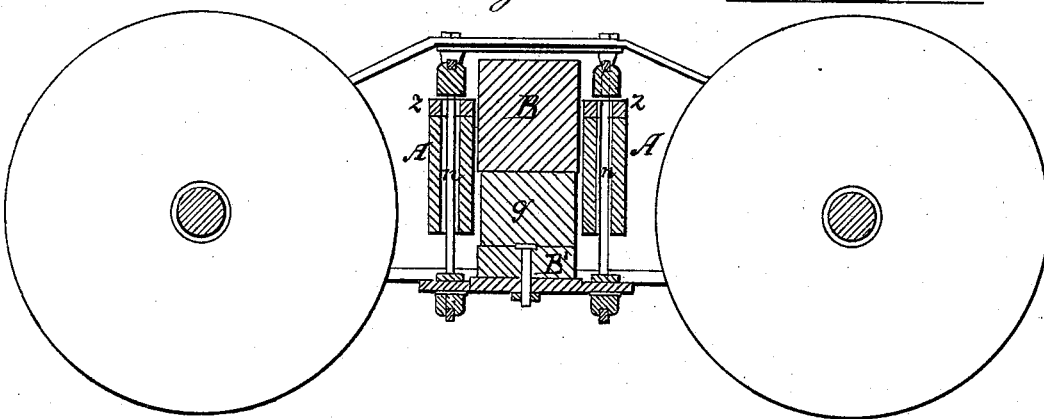
No. 54,085.

Patented Apr. 24, 1866.

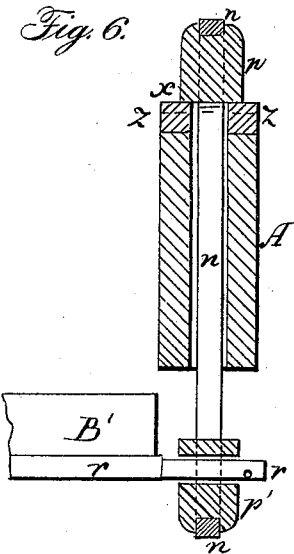
*Fig. 1.*



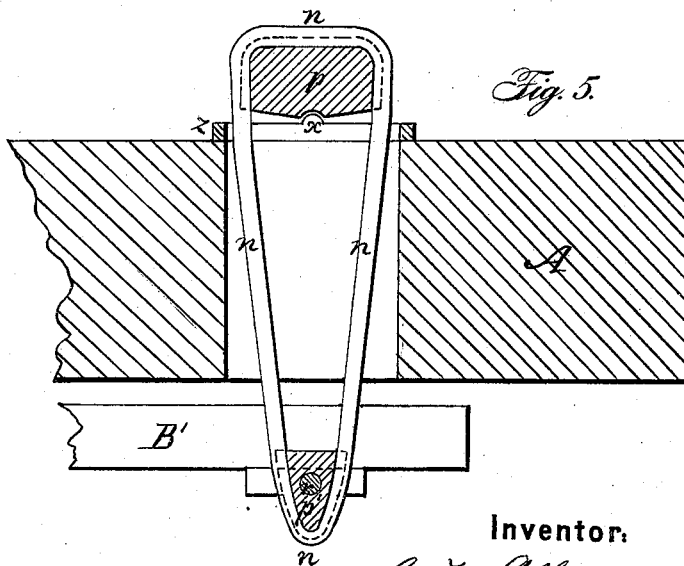
*Fig. 2.*



*Fig. 6.*



*Fig. 5.*



Witnesses:

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# UNITED STATES PATENT OFFICE.

C. F. ALLEN, OF AURORA, ILLINOIS.

## IMPROVED CAR-TRUCK.

Specification forming part of Letters Patent No. 54,085, dated April 24, 1866.

*To all whom it may concern:*

Be it known that I, C. F. ALLEN, of Aurora, in the county of Kane and State of Illinois, have invented a new and Improved Mode of Constructing Railroad-Car Trucks; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a view of one side of my improved car-truck. Fig. 2 is a longitudinal section taken vertically through the truck. Fig. 3 is a top view of the truck. Fig. 4 is a transverse section through the truck, taken in a vertical plane. Figs. 5 and 6 are enlarged sectional views of one of the rocking supports for the swing-beam.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to an improved mode of constructing railroad-car trucks, whereby the braces, truck-irons, stays, and the wood-work composing the trucks are put together in such manner that the strain and vibration incident to the running of the trucks will not be so liable to loosen the fastenings or to rack the parts as with trucks as hitherto constructed.

To enable others skilled in the art to understand my invention, I will describe its construction and operation.

In the accompanying drawings, A A represent the wooden cross-beams which support and keep in place the swing-beam B, upon which the car-body rests. These two beams A A are secured together at their ends by means of metal boxes or H-castings, through which bolts *a a* pass horizontally for securing the whole together.

The upper and lower edges of the boxes *b b* present bearing-surfaces for the pillow-blocks C C and the lower angular braces, D D. These latter braces are notched into the lower edges of the boxes *b b*, and their outer ends, together with the outer ends of the upper angular braces, D' D', are bolted to the upper ends of the axle-boxes E E.

Beneath the braces or truck-irons D D is a horizontal tie-brace, D<sup>2</sup>, which is bolted to the lower ends of the axle-boxes E E, and also to the central cross-beams, A A, posts *c c* being interposed between the two pairs of braces D D<sup>2</sup>, as shown in Figs. 1 and 4.

Two through-bolts, *e e*, are used on each end of the center beams, A A, for securing the braces D D, D<sup>2</sup>, the pillow-block C, and the posts *c c* to the box *b* and beams A A. These bolts *e e*, therefore, pass down through said parts and receive nuts on their ends, by which the whole are drawn singly together. The parts above mentioned, except the transverse beams A A and B, are made of wrought and cast metal, and these metal parts are all brought together and held firmly by the through-bolts.

The pillow-blocks C C, which are bolted upon the top edges of the boxes *b b*, and which also rest upon the upper edges of the beams A A, extend across these beams and serve, in conjunction with the boxes *b b* and their transverse bolts, to secure the ends of said beams together. These blocks C C also elevate the central portion of the upper braces or truck-irons, D' D', so that these irons shall operate in conjunction with the lower irons, D D and D<sup>2</sup>, as braces and supports for the axle-boxes.

The boxes which are interposed between the ends of the center supporting-beams are each constructed with vertical plates, connected together by a vertical and a horizontal web, as shown in Figs. 1, 3, and 4, and these boxes not only serve as braces for keeping the beams A A apart and rigidly connecting them together, but they also serve as metallic abutments for the pillow-blocks C C and the central portions of the braces D D, as above described.

The journal-boxes E E are placed between vertical pillars or guides G G, which are held in place by means of vertical bolts *i i*, which pass down through the ends of the braces D D', through said guides, and finally through the braces D<sup>2</sup> D<sup>2</sup>, as shown in Fig. 1. The ends of the guides G G are recessed to receive the ends of the wrought-metal braces and to prevent lateral displacement. The journal-boxes may be constructed and applied to their guides in any suitable manner, and the rubber springs may be confined between metallic caps, which are constructed with flanges for keeping them in place, as shown in Fig. 1.

The swing-beam, upon which the body of the car is supported, rests upon a horizontal beam, B', as shown in Figs. 2 and 4, rubber blocks

*g g* or other suitable springs being interposed between the two beams *B B'* for giving elasticity, and preventing injurious jars and concussions being communicated to the car-body. The ends of the swing-beam *B* have india-rubber cushions *h h* secured to them, which abut against the vertical webs of the boxes *b b*, as the beam *B* swings endwise, and prevent jar and concussion from this cause.

The beam *B'*, upon which the swing-beam *B* is supported, is suspended at its ends from the beams *A A* by means of wrought-iron loops *n n*. (Shown clearly in Figs. 5 and 6.) These loops are oblong and receive in their ends cast-iron blocks *p p'*, which are kept in place by the loops or links entering notches formed in these blocks. The blocks *p p* are supported upon transverse knife-edge bearings *x x*, upon plates *z z*, that are secured to the upper edges of the beams *A A*, as shown in Figs. 3, 5, and 6. The plates *z z* are slotted, as shown in Figs. 5 and 6, so that the links can pass down through them and have freedom to play in a direction transverse to the truck.

The blocks *p* are made in the form of a rocker, or with an under surface which is inclined in opposite directions from the center of their width, as shown. At the intersection of the opposing inclines a semicircular or *V* shaped notch is cast in the bottom of the blocks *p p*, into which the semicircular or *V* shaped rib *x* of the plate *z* fits, so as to form a loose joint, as illustrated in the drawings. By this construction a cross bolt or rod at each end of the cross-beams, and extending across the swing-beam, is dispensed with, it only being necessary to use cast plates *x x z z* and cast blocks *p*, which have the *V*-shaped notch cast

in them, and are strengthened by the straps *n*, as shown. Thus considerable cost is saved and a more perfect support secured.

The blocks *p p* are allowed to rock, so that the beams *B B'* can swing in a direction with their length. The blocks *p' p'* are connected to the beam *B'* by means of transverse rods *r r*, the ends of which pass through the blocks *p'* and form pivotal connections. The rods *r* are rigidly secured to the bottom of the beam *B'*, and the pivotal ends of said rods project from said beam, as shown in Fig. 2. By thus constructing the supports or suspenders for the swing-beam I am enabled to employ cast-metal blocks and wrought-metal loops or links.

What I claim as new, and desire to secure by Letters Patent, is—

1. The employment of metal boxes *b b* between the ends of the transverse beams *A A* of the truck, said boxes being so constructed and applied that they form metallic bearings or abutments for the metallic blocks *C C*, and the lower strap or brace, *D*, substantially as described.

2. The combination of the straps *D D' D<sup>2</sup>*, the posts *c c*, the pillow-blocks *C C*, and the box *b*, constructed substantially as described, with the wooden cross-beams *A A*, the whole being bolted together, substantially as described.

3. The construction and arrangement of the plates *x x z z*, blocks *p p*, and straps *n n*, in combination with the beams *A A B*, substantially as and for the purpose described.

C. F. ALLEN.

Witnesses:

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