2 Sheets—Sheet 1.

H. THIELSEN.

RAILROAD CAR TRUCK.

No. 90,795. Patented June 1, 1869.

Fig. 1

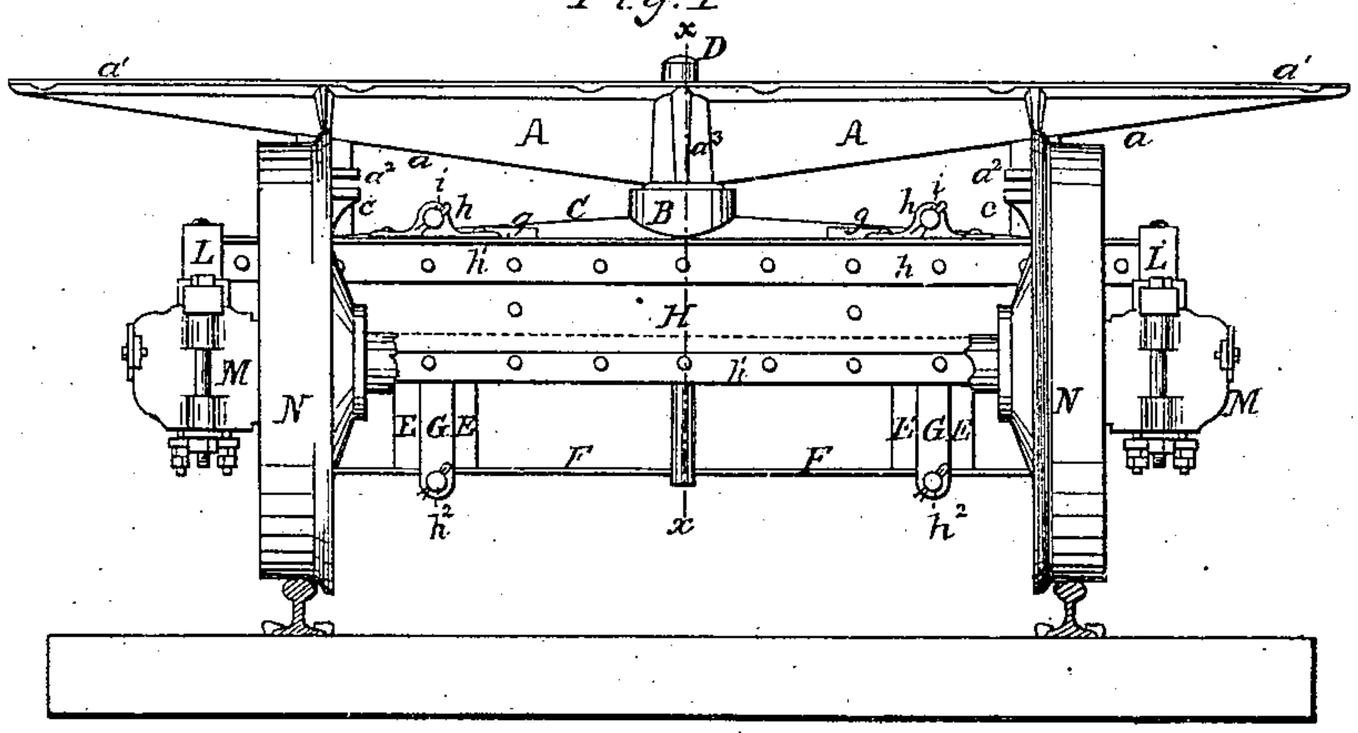
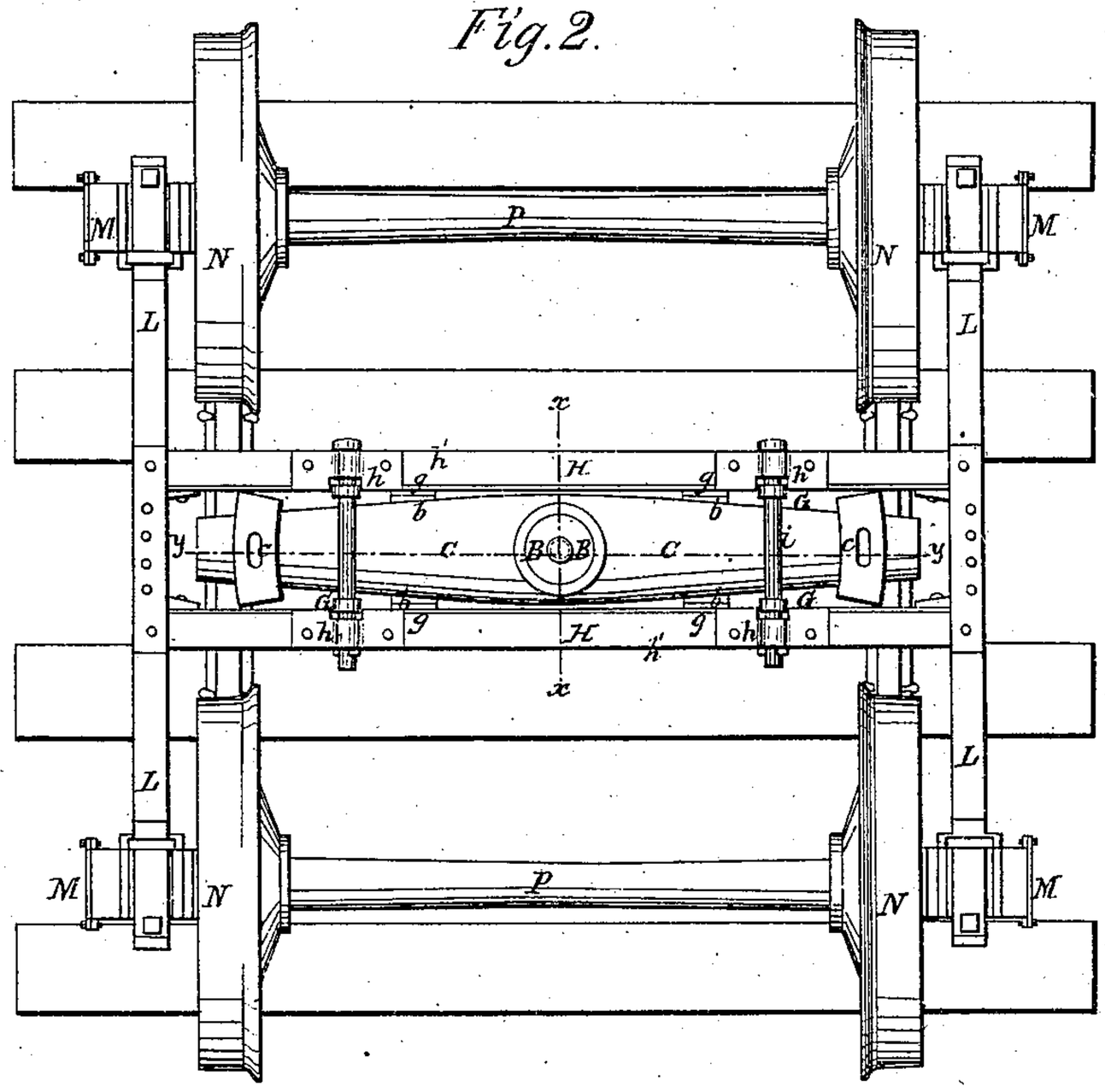


Fig. 2.



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2 Sheets—Sheet 2.

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RAILROAD CAR TRUCK.

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Fig. 3.

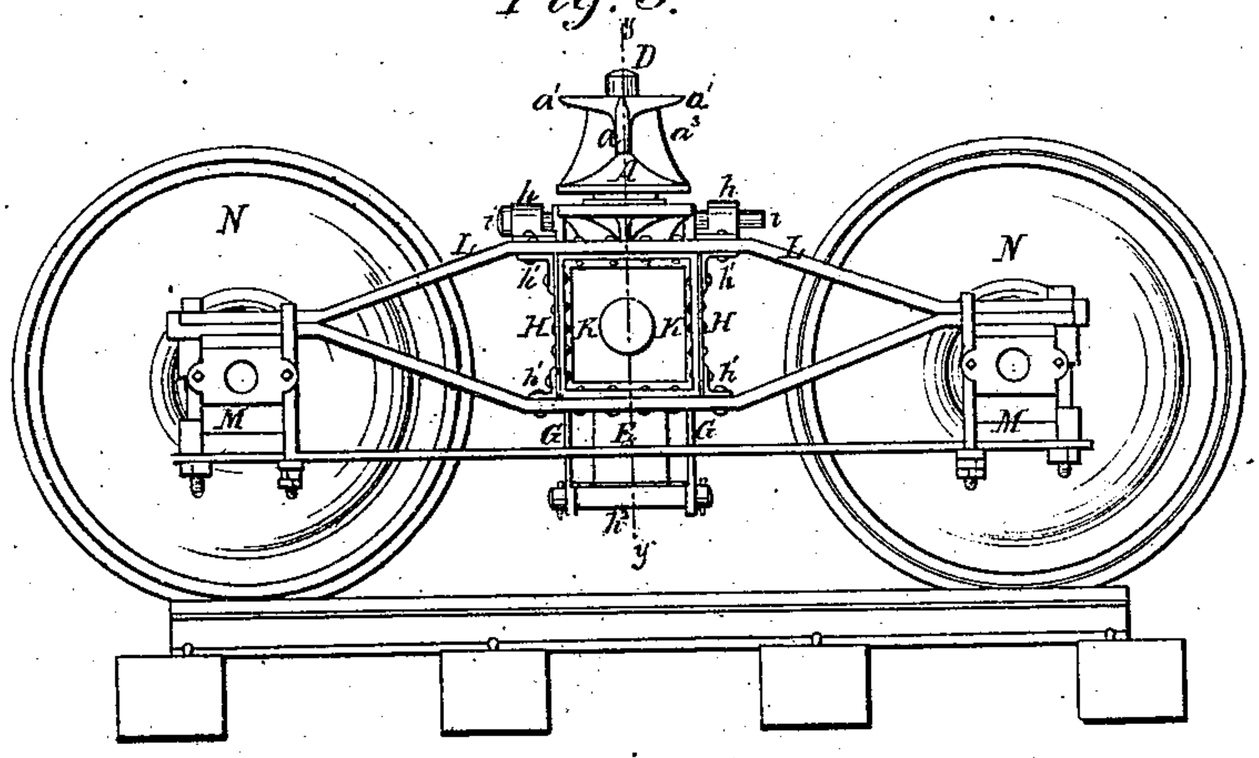


Fig. 4

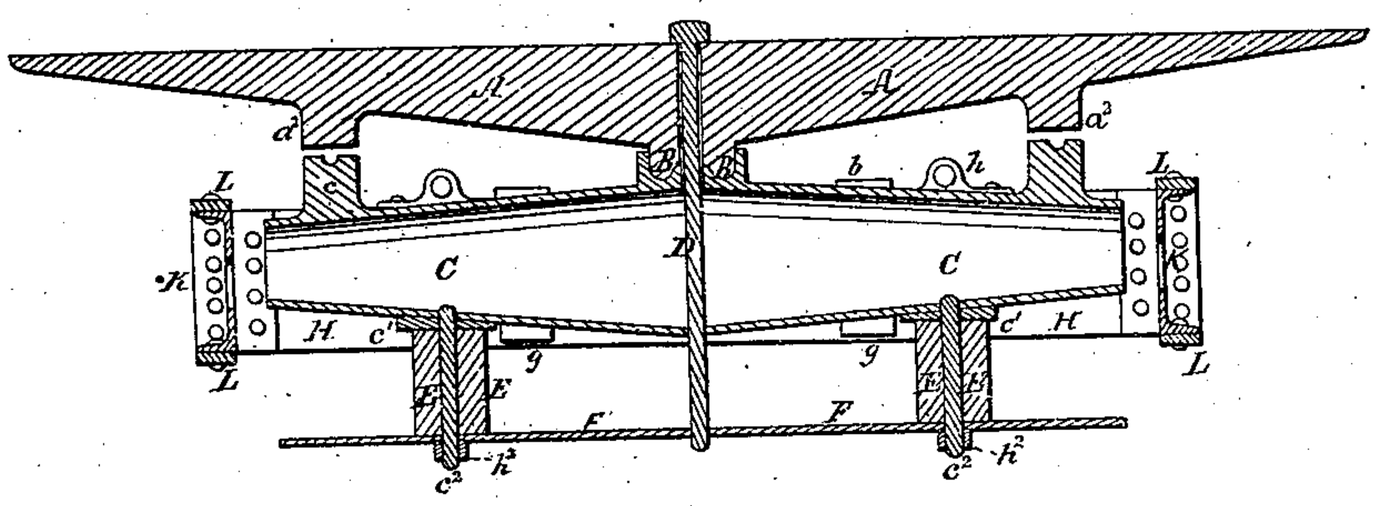


Fig. 5

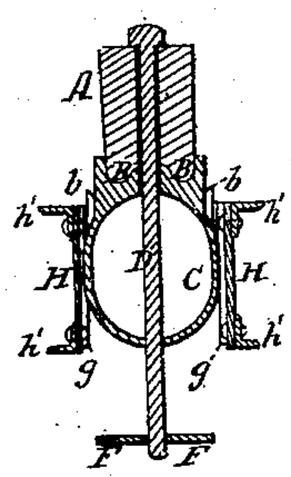


Fig. 6.

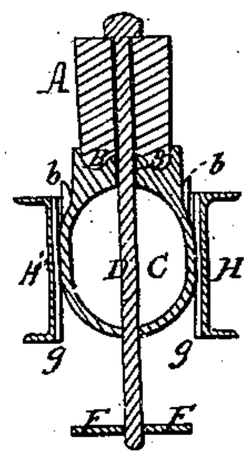
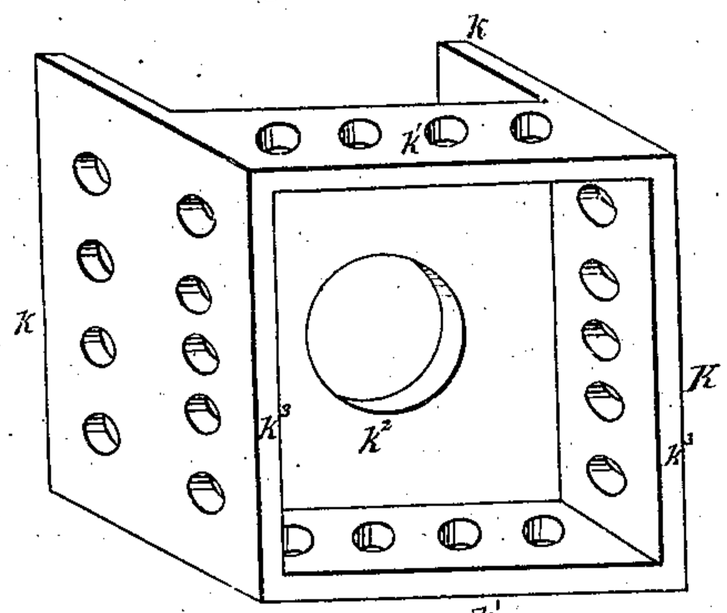


Fig. 7.



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H. THIELSEN, OF BURLINGTON, IOWA.

Letters Patent No. 90,795, *dated June* 1, 1869.

IMPROVED RAILWAY-CAR TRUCK.

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, H. THIELSEN, of Burlington, in the county of Des Moines, and State of Iowa, have invented certain new and useful Improvements in the Construction of Metallic 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, sheet 1, is an elevation of one end of the improved truck, mounted upon a track.

Figure 2, sheet 1, is a top view of the same.

Figure 3, sheet 1, is an elevation of one side of the truck.

Figure 4, sheet 2, is a vertical central section, taken through the improved truck in the plane indicated by line *y y* in figs. 2 and 3.

Figure 5, sheet 2, is a cross-section, taken through the truck in the vertical plane indicated by line *x x* in figs. 1 and 2.

Figure 6, sheet 2, is a section similar to that of fig. 5, showing a modification of the cross-beams.

Figure 7, sheet 2, is a perspective view of one of the metallic head-pieces, constituting a part of the supporting-beams.

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

The object of this invention is to improve those parts of a railroad-car truck which are employed for sustaining a car-body upon its trusses, and relieving it from concussions and undue oscillations, by so constructing them that they will possess greater strength, durability, and lightness than hitherto.

The nature of my invention consists—

First, in constructing the horizontal cross-beams upon which the load is supported, as will be hereinafter explained, either of channel-irons, (a section of which is shown in fig. 6,) or else of wrought-iron plates, arranged edgewise, and stiffened by means of angle-iron bars secured rigidly to their upper and lower edges; and in securing such beams to strong and metallic head-pieces, which are adapted for connecting the beams together at their ends, and securing them to the side trusses of the truck.

Secondly, in a horizontal metallic swing-beam, which is made tubular, and in such manner as to afford great strength and inflexibility, combined with extreme lightness; said beam being adapted for receiving vertical supports for the transom-shoulder abutments for the springs, and side guides, for preventing forward and backward motion between the cross-beams.

Thirdly, in a metallic flanged transom, which is constructed with a truss-rib for strengthening it, and also with a central step, which will assist in keeping it in its place, and allow it to vibrate in its socket, bearing upon the swing-beam, all as will be hereinafter explained.

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

In the accompanying drawings, I have represented my improved girders, or cross-beams H H, applied to side trusses L L, by means of strong cast-iron boxes, or head-pieces K K, which trusses may be applied to the journal-boxes M, on the axles P of wheels N', and constructed in the usual well-known manner, or in any other suitable way.

Each one of the cross-beams H consists of a thin plate of wrought-iron, which is arranged in the truck, so that the whole of the vertical strain is supported by the depth of the plate, or in a direction with its width, and which is stiffened, so as to resist forward and backward vibration by means of angle-iron bars h^1 h^1, arranged along its upper and lower edges, and riveted to it, as shown in figs. 1, 3, and 5.

The beam thus constructed is very light, and also possesses great strength and rigidity. Being made of wrought-iron, say boiler-iron, it will not be weakened by long usage, nor liable to break by sudden shocks.

Each one of these beams may be made of a single piece of wrought-metal, bent in the form known as channel-iron, as represented in fig. 6, at H', which will render unnecessary the riveting on of the angle-pieces, and possess a capability of sustaining vertical strain equal, or nearly so, to the compound cross-beam H, above described.

The cross-beams are firmly riveted to the vertical sides k k^3 of the head-pieces K K, by means of rivets, which leave a vertical space between the beams, large enough to receive the swing-beam C, upon which rests the transom A, as shown in the drawings.

The head-blocks, or pieces K, are constructed of rectangular form with flanges k k^1 k^3, and central strengthening-divisions k^2, as shown in fig. 7, thus adapting these heads to receive on their vertical sides the beams H, and on their horizontal sides the trusses L L, and having the said parts rigidly secured together. In this manner not only the heads K can be secured to the trusses, but the flanges, or angle-irons h^1 h^1 can be secured at their ends to the trusses.

Within the vertical space included between the cross-beams H H, and their heads K K, is a swing-beam C, which is somewhat shorter than the cross-beams H, for allowing it to receive endwise play, and which is sustained by means of suitable springs E E, upon a horizontal stand-board, F, as clearly shown in fig. 4.

The stand-board F rests upon horizontal swivel-stirrups h^2, applied to the lower ends of two pairs of hangers G G.

These hangers are suspended from rods i i, which have their bearings in blocks h h, that are bolted on top of the cross-beams H H.

The springs E E are interposed between the stand-board F and flat-faced bearing c^1 c^1, which are formed

on or applied to the bottom of the swing-beam, as shown in fig. 4, and these springs may be retained in their places by means of the through bolts, or guide-pins c^2. This allows the swing-beam a free elastic play vertically, and also allows it to swing freely in a direction with its length, to prevent undue lateral motion being communicated to the car-body.

Near the extremities of the swing-beam C, on top thereof, are the vertical supports *c*, for steadying the ends of the transom vertically, and at the middle of the length of this swing-beam, and on top thereof, a circular socket-bearing, B, is constructed, for receiving a corresponding step formed on the lower edge, and in the middle of the length of the transom A, as shown in figs. 4, 5, and 6.

A hole is made vertically through the centre of the swing-beam, for receiving the king-bolt D that unites the transom to it, which bolt also passes down through a hole made through the stand-board, as shown in figs. 1, 4, 5, and 6.

The swing-beam is made hollow, of cast or wrought-metal, and in cross-section it may be circular or elliptical, while in longitudinal section it may taper from the middle of its length to its extremities. Such a beam will be very light, yet possess great strength for resisting vertical strain and shocks.

It is prevented from receiving forward and backward or lateral play between its beams H H by means of vertical offsets *b b*, which slide vertically and horizontally against corresponding offsets, or guides *g g*, on the inner surfaces of the said beams, as clearly shown in figs. 5 and 6. Said offsets will also sustain the swing-beam against rocking about its longitudinal axis, by holding it squarely in its place.

The transom, or bolster A is composed of a single piece of cast-iron, and has a horizontal surface terminating in flanged edges a^1 a^1, adapted for receiving bolts through them, for securing this transom to the bed of a car-body. It is strengthened vertically by the tapering or truss-rib *a*, and it is also constructed with pendants a^2 a^2, which afford slides and abutments for the bearings *c c*.

Having described my invention,

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

1. The cross-beams H, composed of plates arranged on edge, stiffened by means of angles along their upper and lower edges, and united at their ends to head-pieces K, substantially as described.

2. The construction of head-pieces K for the cross-beams, with flanges k k^1 k^3, and interior strengthening-wall k^2, substantially as and for the purposes described.

3. A tubular swing-beam, C, for a railroad car truck, constructed substantially as described.

4. The construction, upon a tubular swing-beam, C, of a socket-bearing, B, and side stays *b*, substantially as described.

5. The construction of one piece of metal of a transom, A, with flanges a^1, rib *a*, and bearings a^2, substantially as described.

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