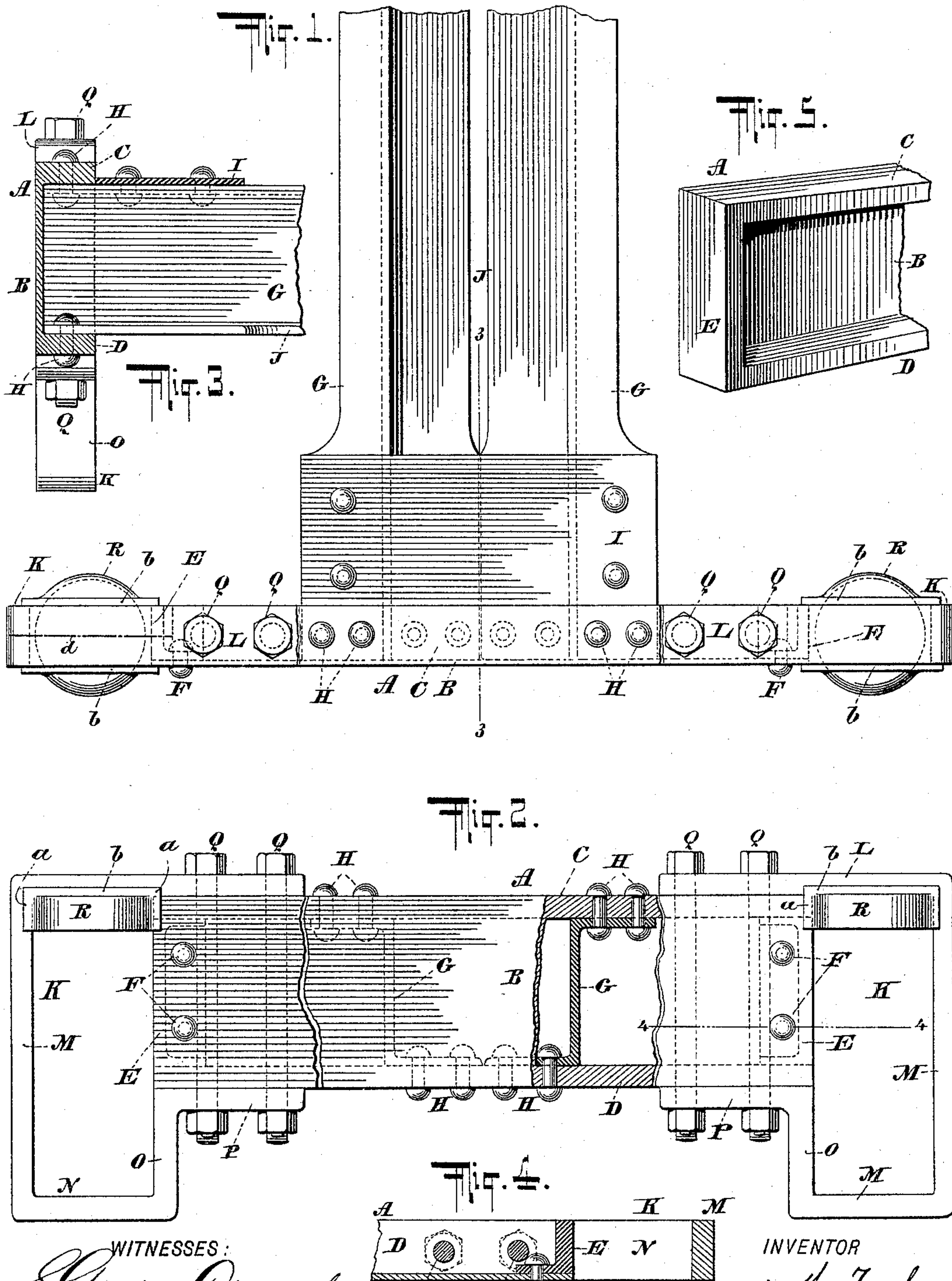


(No Model.)

B. W. TUCKER.  
CAR TRUCK.

No. 584,489.

Patented June 15, 1897.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

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## CAR-TRUCK.

SPECIFICATION forming part of Letters Patent No. 584,489, dated June 15, 1897.

Application filed April 2, 1897. Serial No. 630,377. (No model.)

*To all whom it may concern:*

Be it known that I, BENJAMIN W. TUCKER, a citizen of the United States, and a resident of Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Car-Trucks, of which the following is a specification.

The invention relates to improvements in car-truck frames; and its object is to produce a truck-frame of great simplicity and durability and possessing features of great advantage.

In the embodiment of my invention presented in the accompanying drawings the side frames of the truck comprise rolled or cast beams having at their upper and lower edges inwardly-turned flanges of substantial thickness and substantially of the width required for the pedestal-frames, and the vertical closed ends of said side frames form a part of the closure for the pedestals. The transom comprises a pair of parallel Z-beams cut off square at their ends and entering between the upper and lower flanges of said side frames and having their upper and lower flanges directly riveted to the said flanges of the side frames, and the pedestal-frames each comprise a single bar bent into the required shape and secured at its ends to the upper and lower flanges of the side frames by means which permit the removal, when necessary, of the entire pedestal-frame.

A feature of the construction is that the central vertical longitudinal line through the rubbing-surfaces of the pedestal-frames is brought inward beyond the inner vertical plane of the web of the side frames.

The invention will be fully understood from the detailed description hereinafter presented, reference being had to the accompanying drawings, in which—

Figure 1 is a top view, partly broken away, of a portion of a car-truck constructed in accordance with and embodying the invention. Fig. 2 is a side elevation, partly broken away and partly in section, of same. Fig. 3 is a central vertical transverse section through a portion of same on the dotted line 3 3 of Fig. 1. Fig. 4 is a horizontal longitudinal section through a portion of same on the dotted line 4 4 of Fig. 2, and Fig. 5 is a perspective view

of one end of the side frame of the truck and showing the general form of the end of said frame when the latter is of cast metal as distinguished from a rolled beam.

In the drawings, A designates the side frame of the truck, said side consisting, essentially, of the beam comprising the web portion B, the upper and lower inwardly-turned flanges C D, and the end flanges E, which fill in the space at the ends of the side frames intermediate the upper and lower flanges C D and adapt said ends to form portions of the closure for the pedestal-spaces. The side frames of the truck are of novel form in that the flanges C D are of materially greater thickness than the web B and that said flanges C D are substantially of the width required for the pedestal-frames and are in line with and receive said frames. The end flanges E of the side frames A may be either in a separate piece riveted to the webs B of the side frames, as illustrated in Figs. 1, 2, and 4, or said flanges may be in one integral piece with the said side frames, as illustrated in Fig. 5.

When the side frames A are formed of rolled beams, the flanges E will be in separate pieces of angular shape and secured to the webs of the side frames by means of rivets F, and when the side frames A are of cast metal the flanges E will be in one integral piece with the side frames and with the upper and lower flanges C D, as illustrated in Fig. 5. The end flanges E close the ends of the side frames between the upper and lower flanges C D and form a part of the inner vertical side of the rubbing-surfaces for the usual axle-boxes.

The side frames A of the truck correspond exactly with one another in every respect and are connected by a transom comprising the parallel Z-beams G G, whose lower flanges turn inward toward one another and whose upper flanges turn outward from one another and whose ends are cut squarely off and inserted between the upper and lower flanges C D of the side frames A, the upper flanges of the Z-beams contacting with the lower surface of the upper flanges C and the lower flanges of the Z-beams contacting with the upper surface of the lower flange D, and said



**Z**-beams being directly secured to the upper and lower flanges C D by means of the rivets H, which pass vertically directly through said upper and lower flanges C D of the side frames 5 and the upper and lower flanges of the **Z**-beams G, as illustrated in Fig. 2. The upper and lower flanges C D are of proper width to enable the **Z**-beams to be securely held between them by means of the rivets H, and 10 the width of the upper and lower flanges C D is such that the ends of the **Z**-beams G pass outward beyond the vertical center line through the pedestal-frames connected with said flanges C D. The side frames or beams 15 A are formed with sharp corners at the points of connection between the webs and upper and lower flanges thereof, and hence the transom-beams G G may properly enter the space between the upper and lower flanges 20 C D and be secured to said flanges, while their end edges abut against the webs of said side frames. The ends of the transom-beams G G, at points inward beyond the upper flanges C, will preferably be connected by a 25 top plate I, which will serve to receive the usual side bearing required for the car-trucks. The upper flanges of the **Z**-beams G may be sheared off at their outer edges and intermediate the top plates I, as illustrated in Fig. 1, 30 and the adjoining edges of the lower flanges of the **Z**-beams G may be sheared off in order to form a space J, through which dust, rain, or other matter may escape from the box-like outline formed by said **Z**-beams. The **Z**- 35 shaped transom-beams G constitute a very desirable transom, and the inward turning of the lower flanges of said beams is of advantage in that an abundant space is thereby left for the brake mechanism. The upper 40 and lower flanges of the **Z**-beams G afford abundant surfaces through which the rivets H may be passed in securing said **Z**-beams to the upper and lower flanges C D of the side frames A.

45 The pedestal-frames K are each formed from an integral bar bent to form the upper horizontal member L, the outer vertical member M, the lower horizontal member N, the inner vertical lower member O, and the 50 securing member P, the member O being in direct alinement with the closed end of the side frame A and constituting a continuation of said end in the formation of the inner side of the pedestal. The members of the ped- 55 estal are in alinement with the upper and lower flanges C D of the side frame A, and the inner ends of the bar forming said pedestal-frame K engage the said upper and lower flanges C D and are secured thereto and to 60 the side frame by means of the vertical bolts Q Q, which pass entirely through the upper and lower flanges C D of the side frame and the ends of the pedestal-frame, as illustrated in Fig. 2. The pedestal-frame K is remov- 65 able from the side frame upon the withdrawal of the bolts Q Q, but is otherwise not remov-

able, and constitutes an entirely-closed frame adapted to receive and furnish the guiding-surfaces for the usual axle-boxes, the latter, under the action of the usual springs, being 70 adapted to have a vertical movement within said pedestal-frame. At the upper end of the pedestal-frames K will be applied the inverted sockets R for the upper ends of the usual springs located above the axle-boxes. 75 The sockets R are not separately claimed herein, and they are of cast metal and have end gibs *a* and the upper horizontal gibs *b b*, the gibs *a* receiving the edges of the pedestal-frame and the gibs *b* receiving the lower edges 80 of the upper member L of the said frame. The gibs *a b* serve to guide the sockets R to place and prevent all twisting of the sockets. The bar from which the pedestal-frame K is formed is of the proper width for the guiding- 85 surfaces for the usual axle-boxes and is also of a width corresponding with the width of the upper and lower flanges C D, and hence when the pedestal-frame K is in position the central longitudinal line of the rubbing-surfaces 90 of said frame will be inward beyond the inner vertical plane of the web B of the side frames or beams A, and this is an important feature in that thereby the truck-frame is rendered of increased strength and dura- 95 bility. In Fig. 1 I indicate by the dotted line *d* the center line of the rubbing-surfaces for the axle-boxes, and it will be observed that this line is materially inward beyond the inner vertical plane of the web B of the side 100 frame A and that the outer ends of the transom-beams G extend outward materially beyond the said central line *d*.

The car-truck constructed in accordance with this invention is of great simplicity and 105 strength and may be manufactured at a reasonable expense. It may be observed that the **Z**-beams G G are subjected to no bending operations and are merely cut off square at their ends and that the side beams A are 110 subjected to no bending operations, but are merely cut off square at their ends or cast of square box-like form, and that the pedestal-frames K are of extreme simplicity and durability, each consisting of one integral bar 115 bent into the required shape and secured by the bolts Q Q, which effectually sustain them.

The flanges C D of the side frame are thicker than the web of said frame and have their full width on one side only of said web, whereby 120 the said flanges afford not only the proper strength in regard to their thickness, but the proper width to receive the transom-beams between them and also to receive the ends of the pedestal-frames and permit the end 125 flanges of the side beams to constitute a portion of the rubbing-surfaces for the axle-boxes.

The **Z**-beams are each in a separate piece, but are firmly connected together at their 130 ends by the side frames, and said **Z**-beams instead of each being formed in a separate



piece may both be formed in one integral piece without altering the shape or function of the transom shown.

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

1. In a car-truck, the side frames having inwardly-turned upper and lower flanges, and pedestal-frames at the ends of said side frames, combined with the transom comprising the parallel Z-beams extending transversely across the truck and having their upper and lower flanges between and directly secured to the upper and lower flanges of said side frames; substantially as set forth.

2. In a car-truck, the side frames having inwardly-turned upper and lower flanges, and pedestal-frames at the ends of said side frames, combined with the transom comprising the parallel Z-beams extending transversely across the truck and having their lower flanges turned inward toward one another and their upper flanges turned outward from one another, the ends of said beams being squared off throughout and entering and secured between the upper and lower flanges of said side frames; substantially as set forth.

3. In a car-truck, the side frames having inwardly-turned upper and lower flanges of substantially the width required for the rubbing-surfaces for the axle-boxes, and pedestal-frames at the ends of said side frames and in line with said flanges, whereby the longitudinal central line through the pedestal-frames are brought inward beyond the vertical plane of the web of the side frames, combined with the transom comprising the paral-

lel Z-beams whose ends are secured between the upper and lower flanges of said side frames and extend outward beyond the longitudinal central line through the pedestal-frames; substantially as set forth.

4. In a car-truck, the connected side frames having the upper and lower flanges, combined with the pedestal-frames secured to the flanges of the side frames and each comprising the integral bar bent to form the upper horizontal, outer vertical, lower horizontal and inner lower vertical members of the pedestal-frames, said inner lower vertical member being in line with the end of the side frame; substantially as set forth.

5. In a car-truck, the connected side frames each having the upper and lower and end flanges extended from one side thereof, combined with the pedestal-frames engaging the upper and lower flanges of said side frames, and the bolts passing vertically through said upper and lower flanges and said pedestal-frames, each pedestal-frame comprising the integral bar bent to form the upper horizontal, outer vertical, lower horizontal and inner lower vertical member of the pedestal-frame, said inner lower vertical member being in line with the end of the side frame; substantially as set forth.

Signed at Newark, in the county of Essex and State of New Jersey, this 31st day of March, A. D. 1897.

BENJAMIN W. TUCKER.

Witnesses:

L. RANSFORD COMPTON,  
FRANK BARTLETT.