

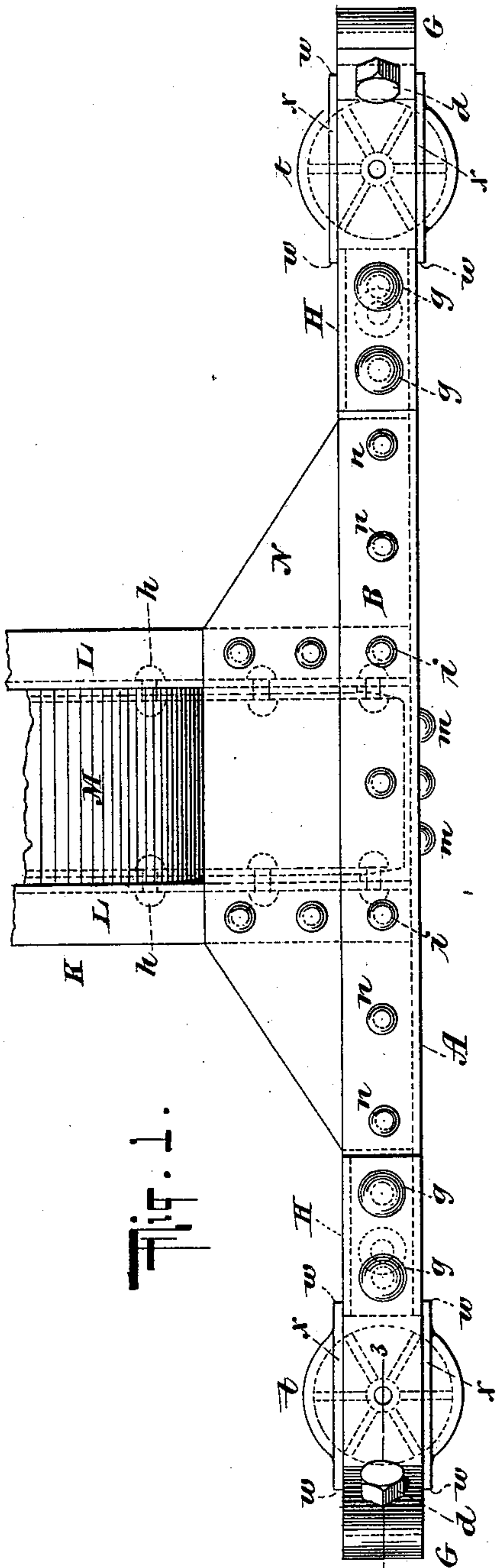
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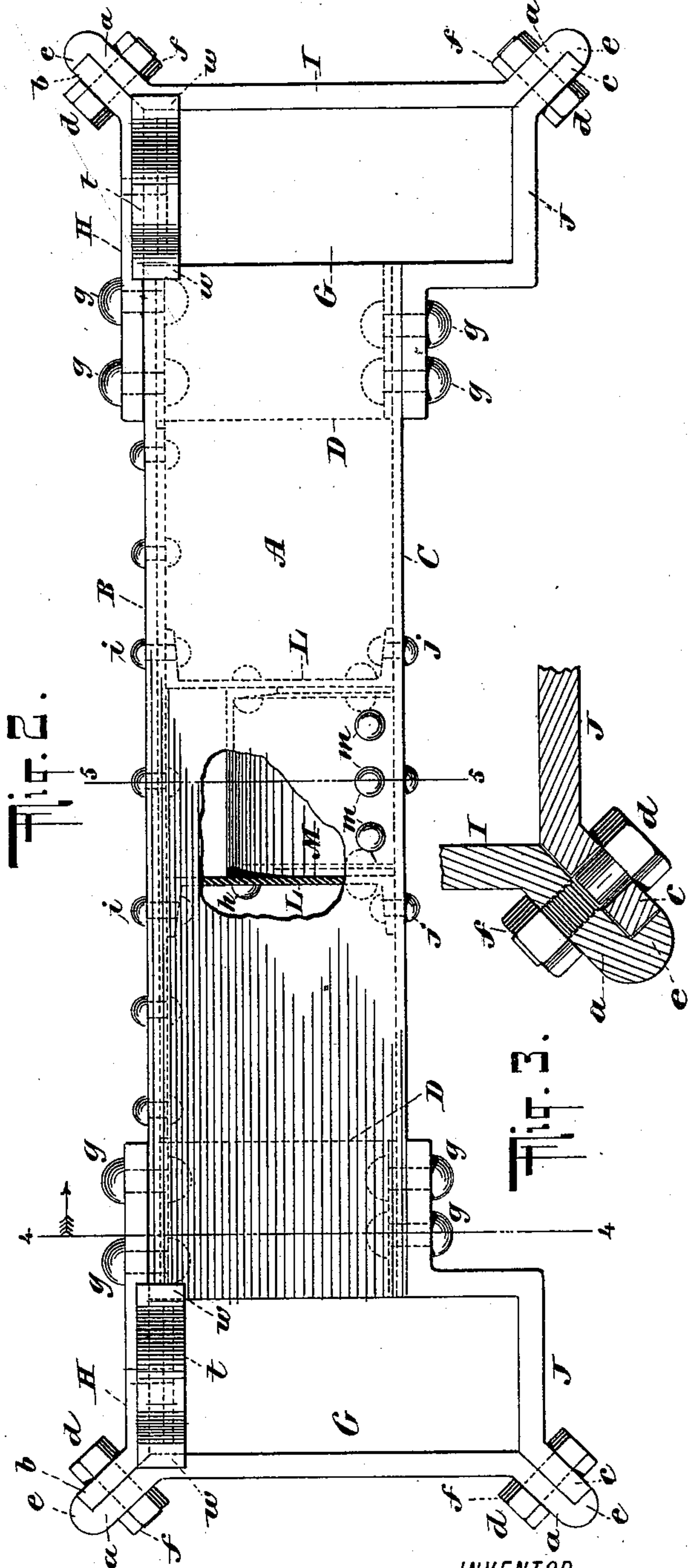
B. W. TUCKER.
CAR TRUCK.

No. 583,611.

Patented June 1, 1897.



WITNESSES:
Gustave Dietrich
John Schlebeck



INVENTOR
Benjamin W. Tucker,
BY
Chas. C. Gill
"ATTORNEY."

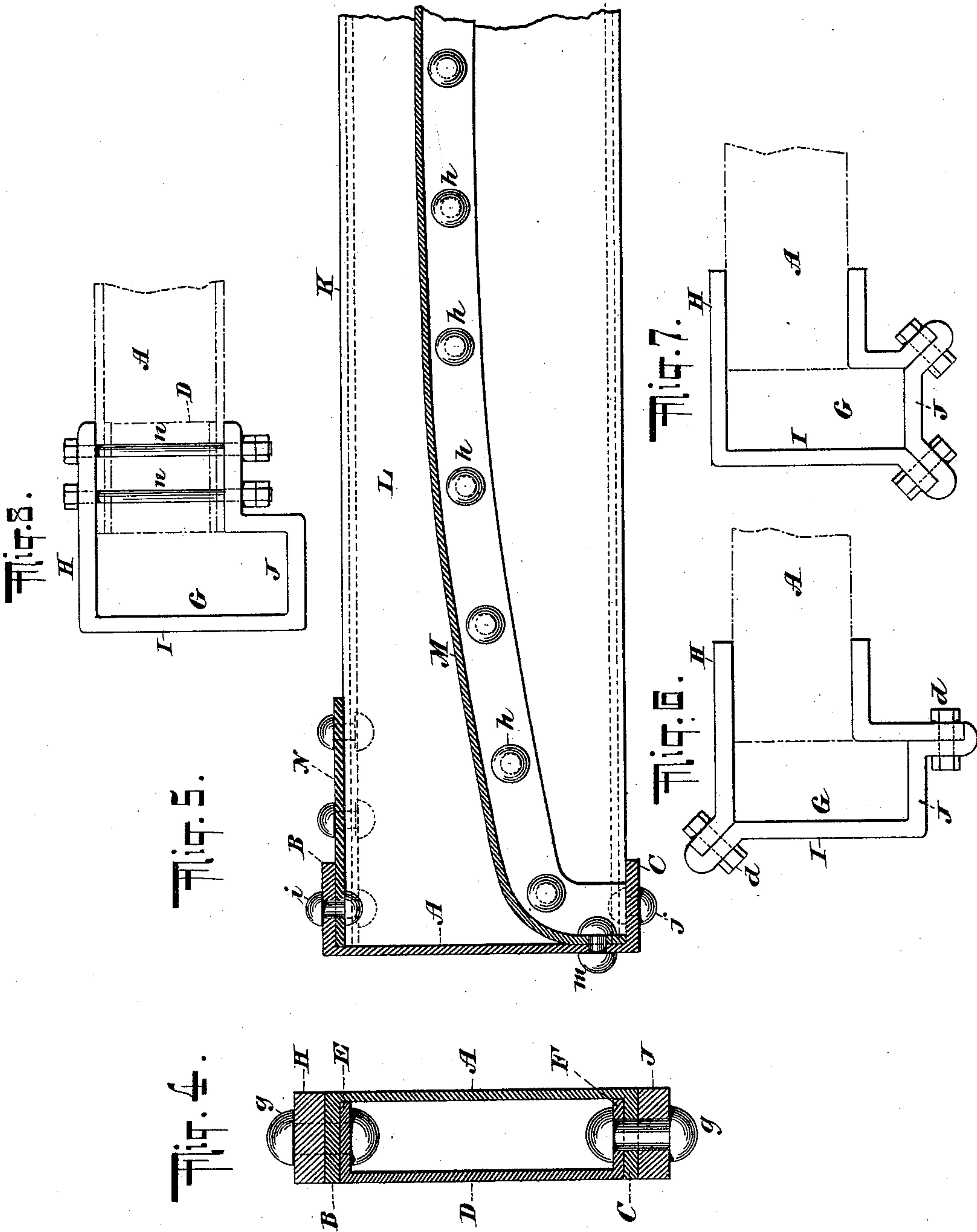
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UNITED STATES PATENT OFFICE.

BENJAMIN W. TUCKER, OF NEWARK, NEW JERSEY.

CAR-TRUCK.

SPECIFICATION forming part of Letters Patent No. 583,611, dated June 1, 1897.

Application filed February 27, 1897. Serial No. 625,326. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN W. TUCKER, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Car-Trucks; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

The invention relates to car-truck frames, and pertains particularly to the side frames or beams, the transom connecting said side frames or beams, the pedestal-frames at the ends of the side frames or beams, and other features, as hereinafter described and claimed.

In accordance with this invention the side frames or beams are duplicates of one another, and each is formed from a rolled beam or plate having, preferably, an inturned flange along its upper and lower edges, the ends of said side beams or frames having a short section of flanged beam applied thereto and preferably at the inner side thereof to form a box-like end at the ends of the side beams or frames. The pedestal-frames are of wrought metal and are secured upon the upper and lower portions of the side frames or beams by rivets or bolts which pass through the pedestal-frame and also through both the upper and the lower flanges of the side beams and the short sections of flanged beams which are applied, preferably, to the inner side of the side beams, adjacent to the ends of the latter, and the said pedestal-frames will either be removable from said frames as a whole or will have one section thereof removable to receive and permit the escape of the usual axle-boxes. The transom connecting the side frames or beams preferably consists of two parallel channel-beams having their flanges turned outward from one another and a channel-beam intermediate the vertical channel-beams and secured to the web thereof, and also to the web of the side frames or beams, and the top plate will connect the vertical channel-beams of the transom and be riveted

at its outer edge to the upper flange of the side beams.

The object of my invention is to produce a car-truck frame of great efficiency and durability and capable of withstanding all of the severe usage and resisting the various strains to which car-truck frames are subjected.

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 of one side and a portion of the transom of a car-truck frame constructed in accordance with and embodying the invention. Fig. 2 is a side elevation, partly broken away, of same. Fig. 3 is an enlarged detached sectional view through a portion of the pedestal-frame on the dotted line 3 3 of Fig. 1. Fig. 4 is an enlarged vertical transverse section through a portion of the side frame, on the dotted line 4 4 of Fig. 2, looking in the direction of the arrow. Fig. 5 is an enlarged transverse section through the truck-frame on the dotted line 5 5 of Fig. 2. Figs. 6, 7, and 8 are detached side elevations showing several modified forms of pedestal-frames which I desire to include within the scope of this application.

In the drawings, A designates the side frame or beam, which, as illustrated, is a plain beam cut off square at its ends and having the inwardly-turned upper and lower flanges, (lettered, respectively, B C.) At the ends of the side frame or beam A are provided the short beam-sections D, extending inward from the outer edge of the beam A to about the point indicated by the dotted lines in Fig. 2, denoting the inner vertical edge of said short beam-sections D. The beam-sections D are provided with upper and lower flanges, (lettered E F, respectively,) which flanges extend inward along the flanges B C of the beam A, while the web of said beam-section D is flush with the outer vertical plane of the flanges B C on the beam A, as shown in Fig. 4, whereby at each end of the side frame A a box-like section is formed, and two thicknesses of flanges are provided at both the upper and the lower edges of the side frame or beam A, adjacent to the ends of the latter.

The pedestal-frames are lettered G, and, as shown, are secured to the ends of the side frames or beams A and extend outward and downward therefrom. Referring to Fig. 2, the pedestal-frames G are each composed of the upper horizontal strap H, the outer vertical strap I, and the lower angular strap J, the latter extending along the lower edge of the side frame A to the end of said side frame, then turning downward in line with said end of the side frame A, and then turning a right angle and extending horizontally to meet the vertical end strap I. The end strap I is removably secured to the straps H J, the ends *a* of the strap I being turned outward at an angle from the main body thereof, and the ends *b c*, respectively, of the straps H J, adjoining the strap I, being turned outward at a corresponding angle and contacting with the face of the bent ends *a* of the strap I, in order that the said ends *a b* and *a c* may be secured together by means of the bolts *d*. The extremities of the ends *a a* of the strap I turn over against the ends *b c* of the straps H J and form strengthening and supporting gibs, (lettered *e*.) The bolts *d* are more clearly illustrated as to their construction and arrangement in Fig. 3, in which it will be seen that the shank end of the bolt passes through a free aperture in the end *c* of the lower strap J and through a threaded aperture in the end *a* of the strap I, and is provided upon its end with a nut *f*, which, in view of the threading of the aperture in the end *a* of the strap I, serves to lock the bolt in position without the use of a jam-nut. By means of the bolts *d* the end strap I may be readily removed and restored to place, and hence for the insertion or removal of the axle-boxes the strap I is rendered convenient of removal, and when in place the said strap I will be found entirely durable and efficient for the purpose of guiding the axle-boxes and of withstanding the end thrusts to which it may be subjected when the car is in use.

I do not limit the invention to the employment of the gibs *e* in every instance, but said gibs will be found to be desirable and I recommend their use. The straps H J of the pedestal-frames are secured at their inner ends by the upper and lower rivets *g g*, which pass through said straps and through the upper and lower flanges of the side beam A and also through the upper and lower flanges of the short beam-section D, as clearly illustrated in Figs. 2 and 4. The vertical portion of the lower strap J and the vertical portion of the strap I are in line with one another and form guiding and rubbing surfaces for the usual axle-boxes, and the width transversely of the straps I J corresponds with the width of the box-like end of the side frame A, and hence said end at the inner side of the pedestal-frame G forms a continuation of the vertical portion of the strap J and serves to receive and guide the usual axle-boxes. The straps H I J are of wrought metal of substan-

tial thickness and width, as indicated in the drawings, and they, in connection with the end of the side frame A and the short beam-section D, constitute an entirely efficient pedestal-frame. When the pedestal-frame is secured to the side frame in the manner shown and above described, it will be found to be entirely effectual and durable, and its attachment to the side frame is such as to insure its being firmly held and entirely capable of resisting the strains which in use are directed against it.

In Figs. 6, 7, and 8 I show several modified forms of pedestal-frames capable of attachment to side beams A in the manner presented in Fig. 2, and these will be referred to hereinafter.

The transom (lettered K) is composed of the vertical parallel channel-beams L L, whose flanges turn outward from one another, and the horizontally-disposed channel-beam M, which is intermediate the beams L L and has its edge flanges secured to the web portion of said beams L by means of the rivets *h*, as clearly indicated in Fig. 5. The ends of the channel-beams L L are secured to the upper and lower flanges of the side beams A by means of the rivets *i j*, respectively, as clearly shown in Figs. 1, 2, and 5. The ends of the intermediate channel-beam M approach the side beams A and then turn downward to rest upon the lower flange C of the side beam A and to permit of the web portion of the said beam M to be directly secured to the web portion of the side beam A by means of the rivets or bolts *m*. The transom constructed and arranged and secured as described is of great efficiency and durability and effectually connects the two side frames of the truck.

The top plate N of the truck is riveted to the upper flanges of the beams L L and also to the upper flange B of the side frame A. The outer edges of the top plate N pass along the top flange B of the side frame A, as more clearly shown in Fig. 5, and is secured to said top flange B by means of the rivets *n*. The ends of the top plate N extend outward to about the inner vertical edges of the short beam-sections D, as indicated by the dotted lines in Figs. 1 and 2. Thus the thickness of the outer portions of the top plate N substantially continues the upper flange E of the short beam-sections D throughout the length of the upper edge of the side frame or beam A.

In Figs. 6, 7, and 8 are shown modified forms of the pedestal G illustrated in Fig. 2, the construction of these modified forms of pedestal-frames being apparent from the foregoing description and an inspection of said figures. In Fig. 6 the outer vertical member I of the pedestal-frame and the lower horizontal member J of said frame are made integral instead of in two pieces, as shown in Fig. 2, and in said Fig. 6 the joining by the bolts *d* is such that the outer vertical member I and the lower horizontal member J of the pedestal-frame are together removable. In

Fig. 7 the upper member H and the outer vertical member I of the pedestal-frame are integral, and the lower member J has its horizontal portion removable from said member I, as in Fig. 2, and also from its remaining parts. In Figs. 2, 6, and 7 the pedestal-frame is shown in each instance as being in part removable, the removable part being secured to the remaining parts by corresponding joints in each instance, and hence the invention is not limited to the special part of the pedestal-frame which is made removable. In Fig. 8 the pedestal-frame is shown as integral throughout, and it is removable from the side A as a whole, being secured thereto by removable bolts *n*, which pass through the upper and lower members of the pedestal-frame and also through the upper and lower flanges of the side A and the upper and lower flanges of the short beam-sections D. Unless some particular member or members of the pedestal-frame is removable, it will be necessary to removably secure the said frame as a whole to said side A. In all of the forms of pedestal-frames shown the box-like end formed at the end of the side frames is in line with the inner vertical portion of the pedestal-frame proper and forms a continuation thereof. The web of the side A and the web of the beam-section D at their ends form an open box whose outer edges will be adapted to receive and guide the usual axle-boxes. The open box-like ends at the ends of the side frames A permit the convenient application of the rivets *g*, by which the pedestal-frames are secured to the sides A. At the upper ends of the pedestal-frames will be provided the integral inverted sockets or receptacles *t*, which will preferably be provided with the vertical end gibs *w* and top horizontal gibs *x*, the gibs *w* being adapted to engage the vertical member of the pedestal-frames and the opposite edges of the box-like frame at the ends of the side frames, while the top gibs *x* will engage the opposite edges of the horizontal member H of the pedestal-frames, as clearly indicated in Figs. 1 and 2. The gibs *w* *x* will serve to center and guide the sockets *t* and prevent the latter from having any twisting movement.

The beam-sections D have been referred to above as short beam-sections, but it is not intended thereby to limit the said sections D to the length illustrated in the drawings. The said sections D will be found to be entirely efficient if given the length indicated in Fig. 2, but they may be longer, if desired. The said sections D, when applied to the ends of the side frames A, afford proper strength for said sides and render the attachment of the pedestal-frames secure and combine with said sides to form an open box-like outline which is adapted to form a part of the pedestal and to receive and guide the usual axle-boxes. The pedestals will, as usual, be provided with the customary axle-boxes and springs.

Reference is hereby made to application Serial No. 625,328, filed by me concurrently

herewith, as claiming, broadly, certain combinations shown, but only specifically claimed herein.

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

1. A car-truck frame comprising the sides having the upper and lower inwardly-extending flanges, and the short flanged sections at the ends of said sides and forming with said sides box-like ends, combined with pedestal-frames extending beyond said ends and secured to the upper and lower flanges of said sides and short flanged sections; substantially as set forth.

2. A car-truck frame comprising the sides having the upper and lower inwardly-extending flanges, and the beam-sections at the inner side of said sides and having outwardly-extending upper and lower flanges, the flanges of said sides and said beams being adapted to one another to form two thicknesses at the top and bottom of the side frame, combined with pedestal-frames extending beyond said sides and beams and below said sides and beams and having arms in alinement with and secured to said upper and lower flanges of the sides and beams; substantially as set forth.

3. A car-truck frame comprising the sides having the upper and lower inwardly-extending flanges, and the beam-sections at the inner side of said sides and having the outwardly-extending upper and lower flanges, the flanges of said sides and beams being adapted to one another to form two thicknesses at the top and bottom of the side frame, and the outer ends of said sides and beams forming surfaces to receive the axle-boxes, combined with the pedestal-frames secured to the said upper and lower flanges of said sides and beams and comprising the upper horizontal member, the outer vertical member, the lower horizontal member and the inner vertical member which is in line with the outer ends of said sides and beams; substantially as set forth.

4. A car-truck frame comprising the side beams having the inwardly-turned upper and lower flanges, and the beam-sections at the ends of said side frames and having the outwardly-turned upper and lower flanges and forming with said ends box-like outlines, combined with a transom connecting said side frames, the top plate secured to said transom and to the upper flange of the side frames and terminating about on a line with the inner vertical edges of said beam-sections, and pedestal-frames at the ends of said side beams; substantially as set forth.

5. A car-truck frame comprising the sides having the upper and lower inwardly-turned flanges, pedestals at the ends of said sides, and a transom connecting said sides, said transom comprising the parallel flanged beams secured to the upper and lower flanges of said sides and the horizontally-disposed flanged beam intermediate said parallel beams and riveted to the webs thereof; substantially as set forth.

6. A car-truck frame comprising the sides having the upper and lower inwardly-turned flanges, pedestals at the ends of said sides, and a transom connecting said sides and comprising the parallel flanged beams riveted to the upper and lower flanges of said sides and the horizontally-disposed arched beam riveted to the webs of said parallel beams and secured at its ends to said side beams; substantially as set forth.

7. In a car-truck frame, the side frames having the flanges at their upper and lower edges, combined with the pedestal-frames extended outward beyond the ends of the side frames but secured at their inner ends to said flanges, said pedestal-frames each comprising the upper horizontal member, the outer vertical member, and the lower member, one part of said pedestal-frame being removable from the other part thereof, the rigid part having outwardly-turned ends and the removable part corresponding ends and said ends being bolted together; substantially as set forth.

8. In a car-truck frame, the side frames having the flanges at their upper and lower edges, combined with the pedestal-frames extended outward beyond the ends of said side frames but secured at their inner ends to said flanges, said pedestal-frames each comprising the upper horizontal member, the outer vertical member and the lower member, one part of said pedestal-frame being removable from the other part, and the adjoining ends of said parts having the correspondingly-turned contacting extremities bolted together and one of said parts having gibs to engage the other part; substantially as set forth.

9. In a car-truck frame, the connected side frames, and the pedestal-frames secured thereto and extended outward beyond the ends thereof, said pedestal-frames being of wrought-bar construction having one part removable from the other part, the adjoining ends of said parts having the corresponding contacting extremities bolted together, said extremities being apertured to receive said bolts and one of the apertures at each joint being threaded; substantially as set forth.

10. In a car-truck frame, the side frames, and the pedestal-frames secured thereto and extended outward beyond the ends thereof, said pedestal-frames each comprising the upper bar or member, the lower member, and the outer vertical member, said outer member being removable and having the outwardly-turned extremities to contact with and be bolted to the outer extremities of the other members; substantially as set forth.

11. In a car-truck frame, the side frames having the inwardly-turned upper and lower flanges, combined with the wrought-bar pedestal-frames secured to said flanges and extending beyond the ends of said sides, and the integral inverted sockets at the upper ends of said pedestal-frames and having the vertical and horizontal gibs to engage the adjacent surfaces of said pedestal-frames; substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

BENJAMIN W. TUCKER.

Witnesses:

CHARLES C. GILL,
E. JOS. BELKNAP.