

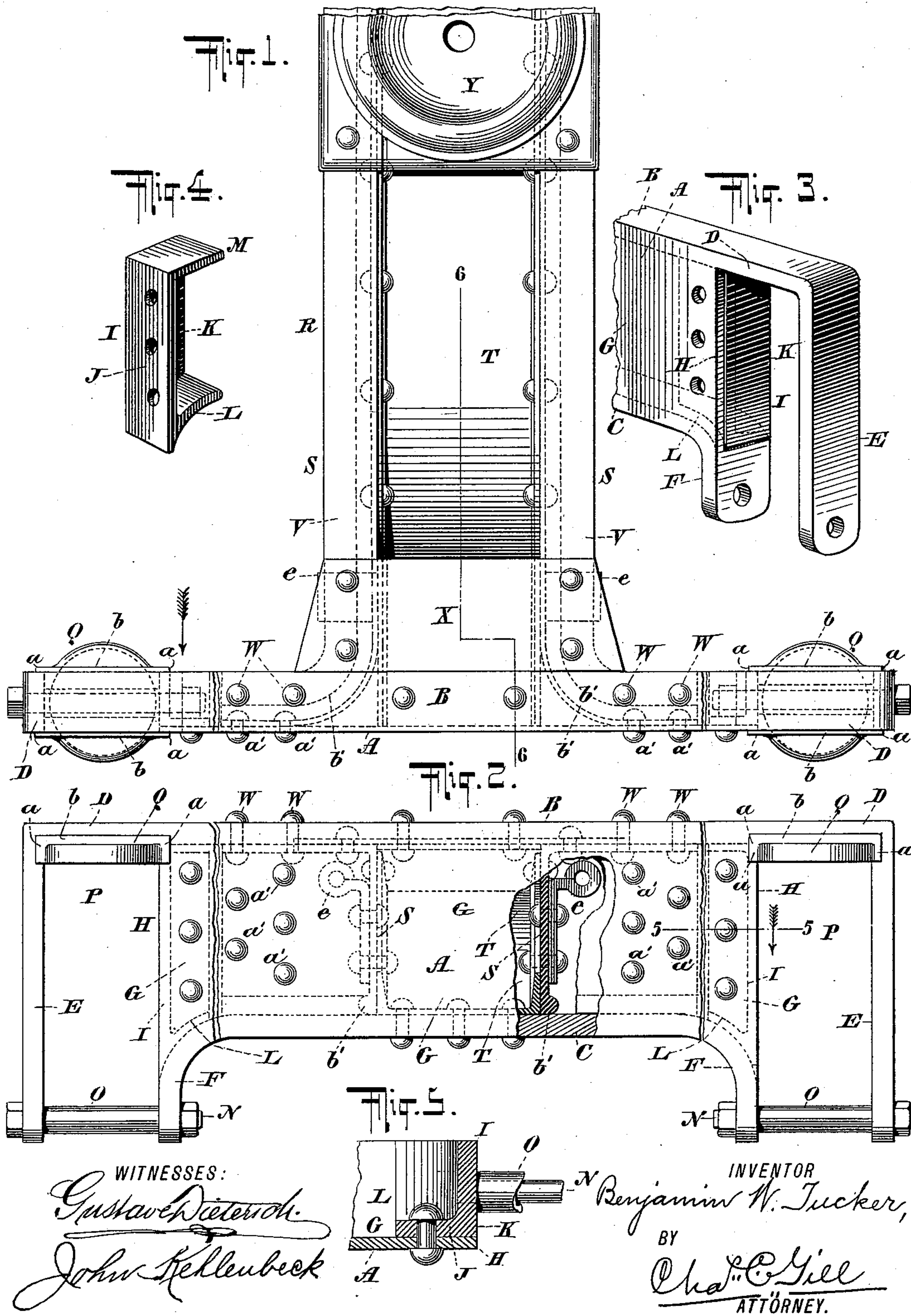
(No Model.)

2 Sheets—Sheet 1.

B. W. TUCKER.
CAR TRUCK.

No. 583,612.

Patented June 1, 1897.



WITNESSES:

Gustave Dietersch
John Kellenbeck

INVENTOR

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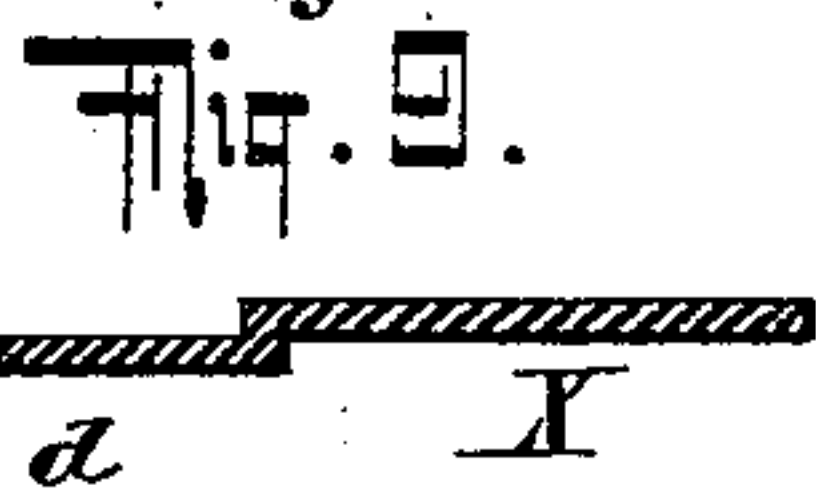
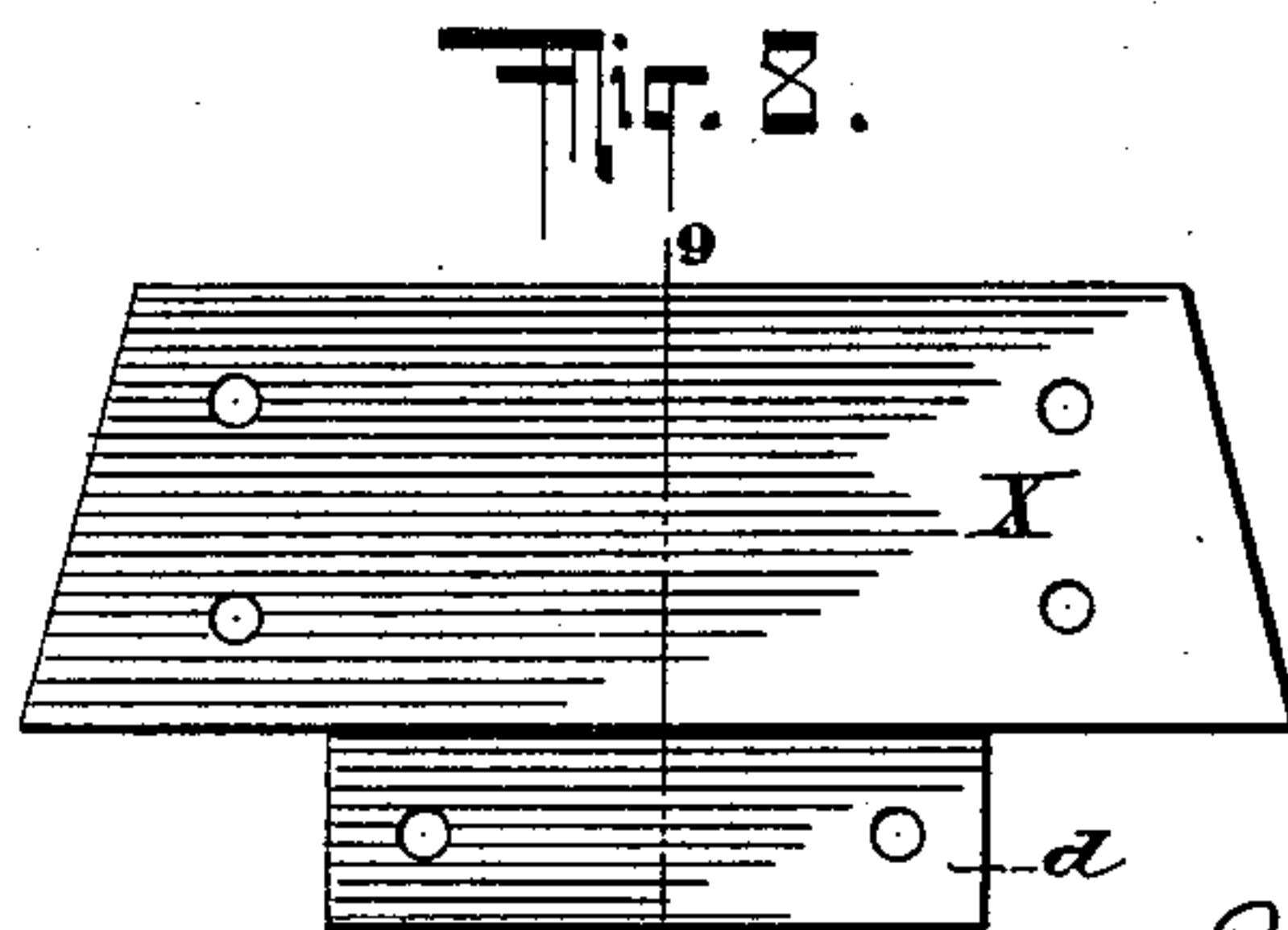
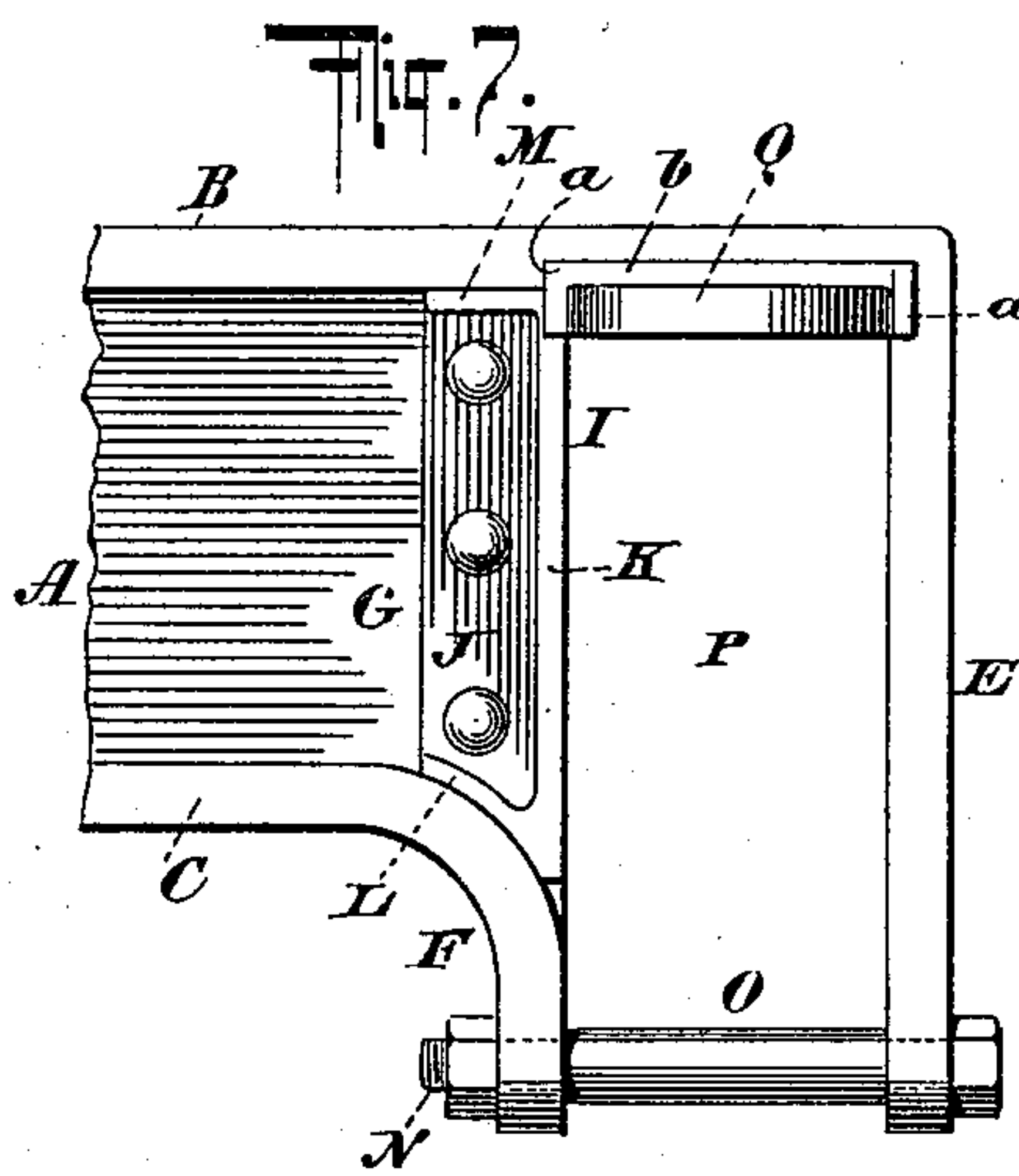
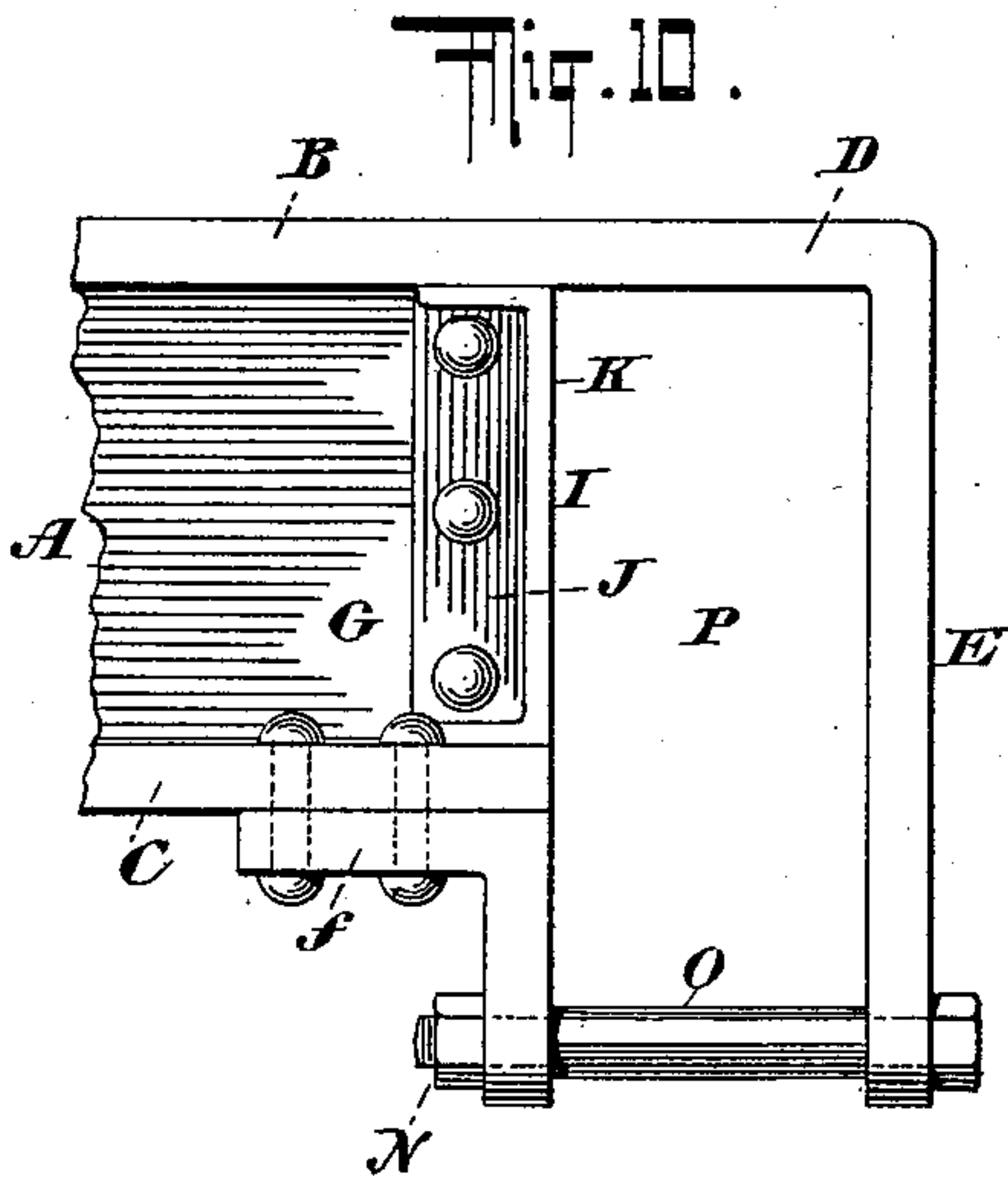
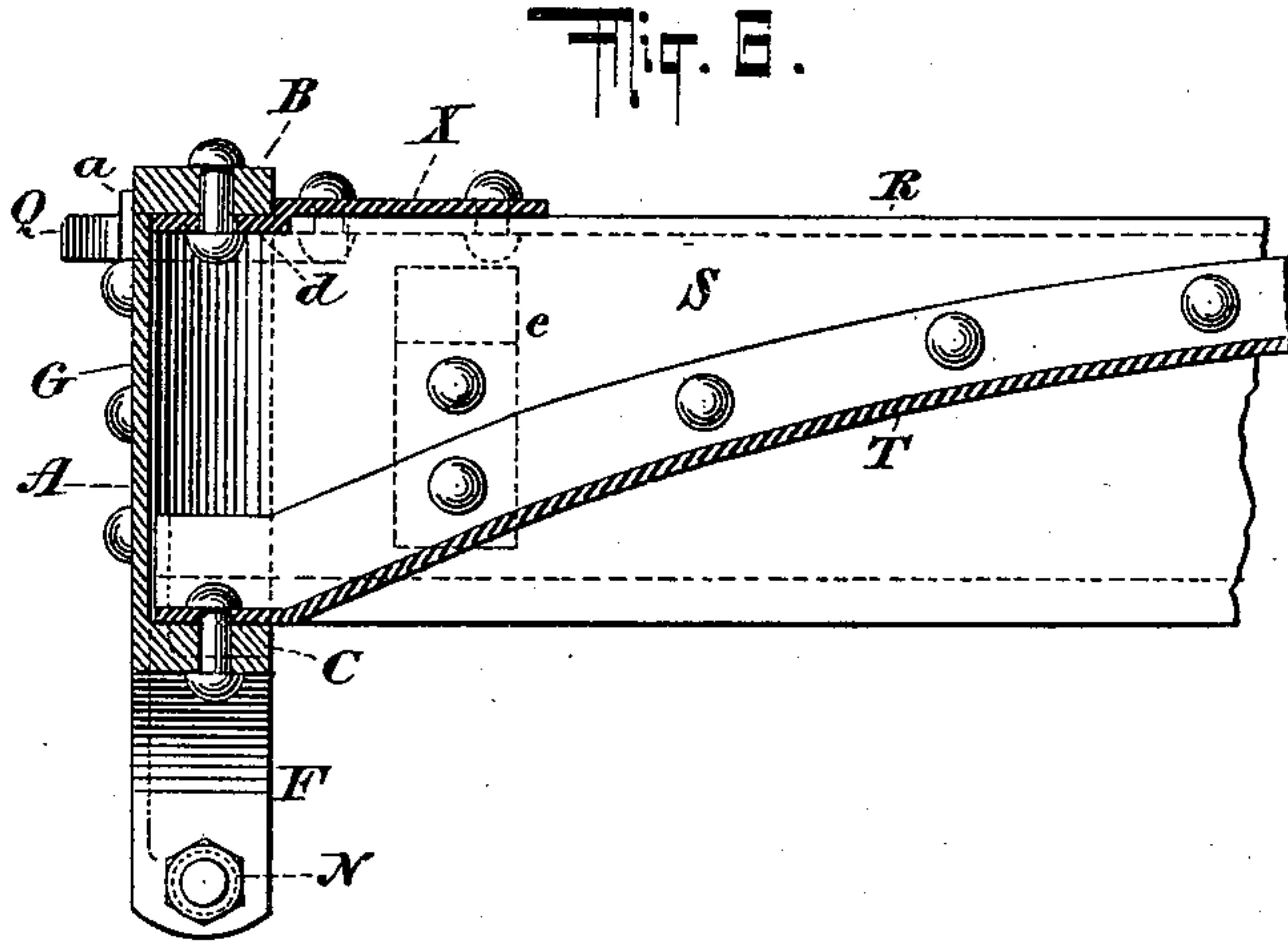
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2 Sheets—Sheet 2.

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WITNESSES:
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UNITED STATES PATENT OFFICE.

BENJAMIN W. TUCKER, OF NEWARK, NEW JERSEY.

CAR-TRUCK.

SPECIFICATION forming part of Letters Patent No. 583,612, dated June 1, 1897.

Application filed February 27, 1897. Serial No. 625,327. (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 in its preferred form the side frames are formed of rolled beams having substantial inwardly-projecting flanges at their upper and lower edges, which flanges at the ends of the side frames are bent to form the pedestal-frames, and the transom connecting the side frames is formed of parallel channel-beams having their flanges turned outward from one another and their ends turned outward to contact with the webs of the side beams to which they are riveted and a horizontally-disposed channel-beam interposed between said parallel beams and riveted thereto, and also to the lower flanges of the side frames or beams.

The details of the construction by which my invention is carried into effect and the advantages thereof will appear in full hereinafter and are illustrated in the accompanying drawings, in which—

Figure 1 is a top view, partly broken away, of a portion of a car-truck frame 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 detached perspective view of one end of the side frame and illustrating more particularly the method of forming the pedestal-frame for the usual axle-box and spring. Fig. 4 is a detached perspective view of an angular piece of metal applied to the inner side of the side frame to complete the inner vertical side of the pedestal. Fig. 5 is a de-

tached sectional view through a portion of the side frame on the dotted line 5 5 of Fig. 2. Fig. 6 is a vertical transverse section through the truck-frame on the dotted lines 6 6 of Fig. 1. Fig. 7 is a detached side elevation of one end of the side frame, looking in the direction of the arrow in Fig. 1. Fig. 8 is a detached top view of the top plate at each side of the truck-frame which is riveted to the upper flanges of the parallel transom-beams and the top flange of the side frame. Fig. 9 is a sectional view of same; and Fig. 10 is a side elevation, looking at the inner side of the side beam, of a portion of the truck-frame illustrating a modified form of the pedestal-frame.

In the drawings, A designates the side frame, which is formed from a rolled beam having the substantial upper and lower longitudinal flanges B C at its edges, said flanges being turned inward and being of a width corresponding with the guiding-surfaces required for the usual axle-boxes. In the construction of the side frames A the beam at its ends will be cut out in order that the upper flange B thereof may be left free to form the upper end or member D and the outer vertical member E of the pedestal-frame and in order also that a portion of the lower flange C of the side beam may be turned downward on curved lines to form the inner vertical member F of the pedestal-frame. The uniform thickness of the web G of the side frame at the ends of the latter will be preserved during the formation of the inner vertical member F of the pedestal-frame by the usual process of metal working, known as "bulldozing," whereby the end edges H H of the side beam proper are left on vertical lines in alinement with the outer edges of the vertical member F of the pedestal-frame, and the said edges H are preserved of uniform character throughout. The upper flange B of the side frame or beam A thus is made to constitute the upper end or member and the outer vertical member of the pedestal-frames, and the lower flange C of said side frame or beam A is made to constitute the inner vertical member of that portion of the pedestal-frames which extends downward below the lower longitudinal edge of the side frames A. In view of the fact that the flanges B C extend inward and

that the thickness of the web G of the side frames is not sufficient to constitute alone the guiding-surfaces for the axle-boxes the auxiliary angle-iron pedestal-pieces I are riveted 5 through their flanges J to the inner side of the vertical web of the side frame A adjacent to the ends thereof in order that the flange K of said pedestal-pieces I may be brought into alinement with and constitute 10 virtually an upward extension of the outer vertical face of the pedestal member F, the pedestal member F and the said flange K, with the edge thickness of the web G, constituting the complete inner side of the pedestal- 15 frame adapted to receive and guide the usual axle-boxes. The flange C of the side frame curves downward, and hence the pedestal-pieces I are formed with the curved flange L at their lower ends to fit upon the curved sur- 20 faces of the flange C at points where they curve downward to form the lower member F of the pedestal-frames. By preference the upper end of the pedestal-pieces I are formed with the horizontal flange M, adapted to fit beneath 25 the upper flange B of the side frame A, as illustrated in Fig. 7. The width of the vertical member E of the pedestal-frame corresponds with the combined width of the flange K of the pedestal piece I and the thickness of 30 the end of the web G of the side frame A. Thus the outer vertical side of the pedestal-frame is formed to completion by the downwardly-extending portion of the upper flange B of the side frame. The lower end of the 35 pedestal-frame will preferably be closed by a removable bolt N, upon which, intermediate the lower members of the pedestal-frame, will usually be applied a sleeve O. (Shown more clearly in Fig. 5.) The main side frame A 40 and the pedestal-frames at the ends thereof are thus principally in a single integral piece of wrought metal.

At the upper ends of the pedestal-spaces P are provided the invented integral sockets 45 Q for the usual springs, which will be placed above the axle-boxes, and said sockets Q are formed with the vertical end gibs *a* and horizontal top gibs *b* to engage the adjoining edges of the pedestal-frames.

50 The transom R will preferably be composed of the parallel beams S S and the horizontally-disposed channel-beam T, which is intermediate the parallel beams S S, and at its flanged edges is riveted to the webs of said 55 parallel beams S S. The flanges of the intermediate beam T turn upward, as illustrated in Fig. 6, and the web portion of said intermediate beam T is thus enabled to be seated upon and riveted to the lower flange 60 C of the said side frames or beams A, as illustrated in Fig. 6. The intermediate beam T will preferably be arched, as illustrated in Fig. 6, and extend from side to side of the truck-frame in order that it may not only 65 secure the parallel transom-beams S S together, but also tie the side beams A together. I do not limit the invention to the contin-

uous beam T, since in some modifications thereof it may not be necessary to have the said beam T in a continuous piece. It is very 70 much better, however, that the said beam T be in one continuous piece and have an arched form. The transom-beams S S are of ship's-knee shape in cross-section and their upper flanges V extend outward from one an- 75 other, as illustrated in Fig. 1, and are secured by rivets or bolts W to the upper flange B of the side frame A. The end portions of the transom-beams S S turn outward from one another in order that their web may con- 80 tact with and be secured to the vertical web of the side frames A by means of the rivets or bolts *a'*. The lower edge of the parallel transom-beams S S is formed with the bulb or rib *b'*, and this bulb or rib along the end por- 85 tions of the beams S S rests upon the lower flange C of the side frame A, as indicated by the dotted lines in Figs. 1 and 2. It will be found necessary to extend the ends of the transom-beams S S along the side frames A 90 only far enough to enable said ends to be adequately secured to said side frames.

The top plate X at each side of the truck connects the transom-beams S S and is preferably formed at the central part of its outer 95 edge with the tongue *d*, which will, as shown in Fig. 6, pass below the upper flange B of the said side frame A and be riveted to said flange.

Upon the outer side of the transom-beams 100 S S are riveted or bolted the usual brake-hangers *e e*, and the said transom-beams S S may at their center be provided with a suitable center-bearing, one form of which is indicated at Y in Fig. 1. 105

The car-truck constructed as above described is particularly efficient and durable in every part. The side frames and pedestals formed in the manner described are practi- 110 cally indestructible and entirely capable of withstanding the severe usage to which car-truck frames are subjected. The transom is entirely efficient and combines with the side frames to produce a car-truck frame fully ca- 115 pable of resisting the various strains to which car-truck frames are usually subjected. The beams S S of the transom are highly-advantageous also in that the lower edges of said beams will not interfere with the brakes, but, on the other hand, leave increased space for 120 the action of the brakes suspended from the hangers *e*.

I do not limit the invention to all of the details of construction described above, since it is possible to vary the construction in some 125 parts without departing from the invention as a whole. For instance, I would consider the main part of my invention present if the inner vertical member F of the pedestal-frames were not integral with the lower flange 130 C of the side frame A, but were made from a separate bracket *f*, riveted to said lower flange C of the side frame A, as indicated in Fig. 10, which shows a modification of this

feature of the construction; nor would I regard the invention as a whole departed from if the upper end of the member E of the pedestal-frame were not in an integral piece with the member D of said frame. The structure as a whole, however, is entirely practicable and efficient in every particular, and I refer to modifications merely that it may be understood that some details of the structure may be varied without departing from the scope of the invention as claimed.

It will be observed that the web G of the side frames is thinner than the upper and lower inwardly-turned flanges B C of said frames and that the pedestal-frames are in direct alinement with said flanges, whereby the longitudinal vertical central line through said pedestal-frames is brought inward beyond the inner vertical plane of said web, to which the ends of the beams S S may be riveted, and whereby also the lower edges of the ends of said transom-beams S S may receive support on the lower flange C at points outward beyond the longitudinal vertical central line through said pedestal-frames. The bulb or rib b' at the lower edges of the beams S S affords proper strength, but occupies so little space as to allow the much-desired room for the brake mechanism suspended from the hangers *etc.* The flanges B C are on one side only of the side frames, and hence the exterior face of said frames is left smooth, and the pedestal-frames may have their central vertical plane set inward from the vertical plane of the inner side of the web of the side frame.

The invention is not of course limited to the bolt N for closing the lower end of the pedestal-space.

Reference is hereby made to applications Serial Nos. 625,326 and 625,328, filed by me concurrently herewith, as claiming, broadly, certain subject-matter shown, but only specifically claimed herein.

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

1. In a car-truck the rolled-beam side frames having the flanges at their upper and lower edges, the upper flange at its ends extending outward beyond the web of the beam and forming the upper horizontal member and outer vertical member of the pedestal, and the lower flange at its ends turning downward below the side frame to form the lower inner vertical portion of the pedestal; substantially as set forth.

2. In a car-truck the rolled-beam side frames having the flanges at their upper and lower edges, the upper flange at its ends extending outward beyond the web of the beam and forming the upper horizontal and outer vertical members of the pedestal, and the lower flange at its ends turning downward below the side frame to form the lower inner portion of the pedestal, combined with the right-angular auxiliary pedestal-piece secured to the side of the side frame in aline-

ment with the downwardly-turned ends of said lower flange; substantially as set forth.

3. In a car-truck the rolled-beam side frames having the flanges at their upper and lower edges, the upper flange at its ends extending outward beyond the web of the beam and forming the upper horizontal and outer vertical members of the pedestal, and the lower flange at its ends turning downward below the side frame to form the lower inner portion of the pedestal, combined with the right-angular auxiliary pedestal-piece secured to the side of the side frame in alinement with the downwardly-turned ends of said lower flange, and the inverted sockets at the upper ends of the pedestal-spaces and having the vertical and horizontal gibs to engage the adjacent edges of the pedestals; substantially as set forth.

4. In a car-truck, the rolled-beam side frames having the inwardly-extending flanges at their upper and lower edges, the upper flanges being of the width desired for the pedestal-frames and extending beyond the web of the side frames and forming the upper horizontal and outer vertical members of the pedestal-frames and directly furnishing rubbing and guiding surfaces for the axle-boxes; substantially as set forth.

5. In a car-truck, the rolled-beam side frames having the web and the upper and lower flanges integral therewith and of substantial thickness and a width corresponding with the width desired for the pedestal-frames, said flanges extending laterally from one side only of the web of said rolled beam and being longer than said web, the projecting ends of said flanges constituting a part of the pedestal-frames, whereby the central vertical line through the pedestal-frames is brought beyond the vertical longitudinal center of the webs of the side frames; substantially as set forth.

6. In a car-truck, the rolled-beam side frames having flanges at their upper and lower edges, and pedestal-frames at the ends of said side frames, the upper horizontal and inner downwardly-projecting vertical members of said pedestal-frames being formed from the upper and lower flanges of said side frames; substantially as set forth.

7. In a car-truck, the side frames, and pedestals at the ends of said side frames, combined with the transom connecting said side frames, said transom comprising the parallel rolled beams of ship's-knee shape in cross-section; substantially as set forth.

8. In a car-truck, the side frames, and pedestals at the ends of said side frames, combined with the transom connecting said side frames, said transom comprising the parallel rolled beams of ship's-knee shape in cross-section and having their end portions turned outward to bring their webs into contact with the webs of the side frames to which they are riveted; substantially as set forth.

9. In a car-truck, the side frames, and ped-

estals at the ends of said side frames, combined with the transom connecting said side frames, said transom comprising the parallel vertical beams and the horizontally-disposed intermediate channel-beam secured to the webs of said parallel beams and having the web portion of its ends secured to the lower flange of said side frames; substantially as set forth.

10 10. In a car-truck, the side frames, and pedestals at the ends of said side frames, combined with the transom connecting said side frames, said transom comprising the parallel vertical beams and the intermediate horizontally-disposed channel-beam which is arched and has its edge flanges turned upward and riveted to the webs of said parallel beams; substantially as set forth.

20 11. In a car-truck, the side frames, and pedestals at the ends of said frames, combined with the transom connecting said side frames,

said transom comprising the parallel beams of ship's-knee shape in cross-section and the intermediate horizontally-disposed channel-beam secured along its flanges to the webs of said parallel beams; substantially as set forth. 25

12. In a car-truck, the side frames having the upper and lower edge flanges, and pedestals at the ends of said side frames, combined with the transom connecting said side frames and comprising the parallel beams of ship's-knee shape in cross-section whose end portions are between said edge flanges, and the top plate connecting said parallel beams and riveted to the said side beam; substantially as set forth. 30 35

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

BENJAMIN W. TUCKER.

Witnesses:

CHAS. C. GILL,

E. JOS. BELKNAP.