

No. 745,536.

PATENTED DEC. 1, 1903.

B. W. TUCKER.  
CAR TRUCK.

APPLICATION FILED SEPT. 1, 1903.

NO MODEL.

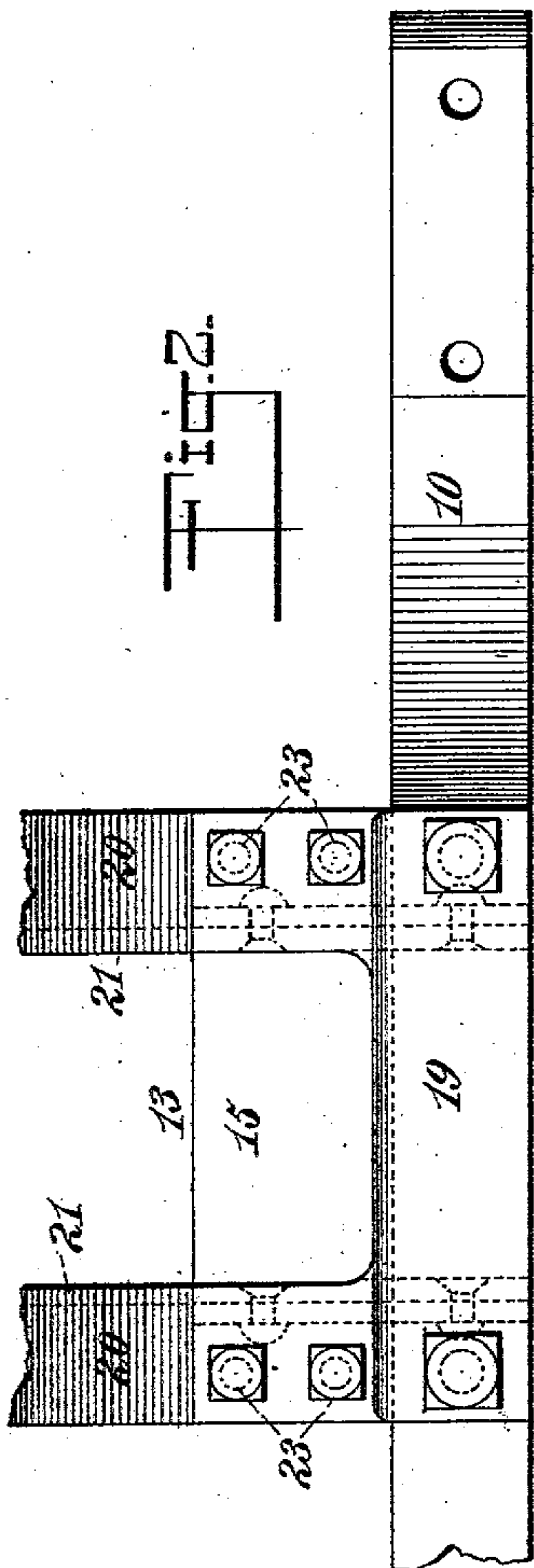


Fig. 2.

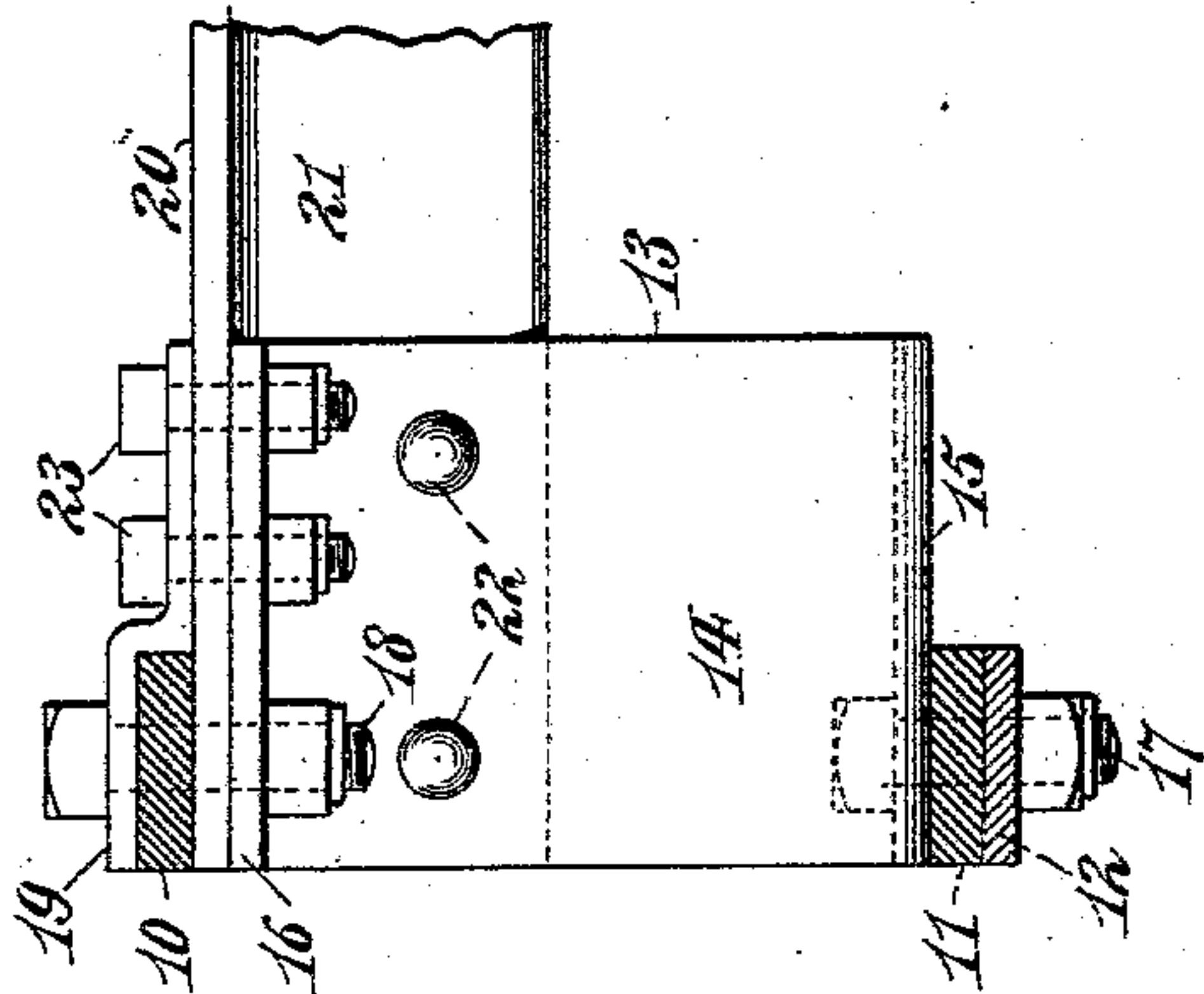


Fig. 3.

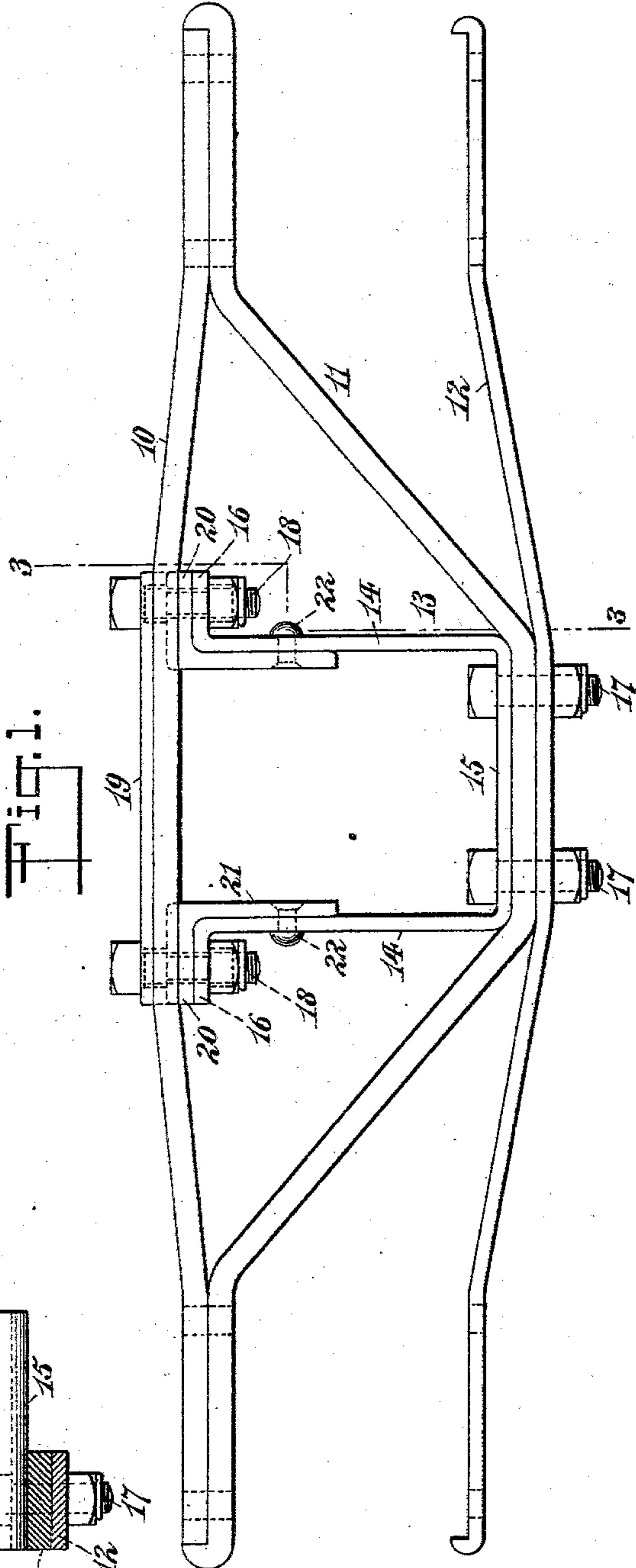


Fig. 1.

WITNESSES:

Anna C. Broderick.  
Arthur Marion.

INVENTOR

Benjamin W. Tucker,

BY

Chas. C. Gill

ATTORNEY



# UNITED STATES PATENT OFFICE.

BENJAMIN W. TUCKER, OF NEWARK, NEW JERSEY, ASSIGNOR TO EDWARD CLIFF, OF NEW YORK, N. Y.

## CAR-TRUCK.

SPECIFICATION forming part of Letters Patent No. 745,536, dated December 1, 1903.

Application filed September 1, 1903. Serial No. 171,466 (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-trucks, and particularly to improvements in car-trucks of the diamond pattern; and my invention consists in the novel features and combinations of parts hereinafter described, and particularly pointed out in the claims.

One object of the invention is to render more rigid and durable the side frames of the truck, particularly at their central portions, and to so construct and connect said side frames that the squareness of the truck may be preserved and yet that the truck-wheels may be able to remain on the track-rails notwithstanding the usual curvatures and irregularities in the latter.

A further object of the invention and one of which I deem to be of great importance is to so construct and secure the transoms that they are rendered capable of withstanding severe strains, and a further object of the invention is to provide at the central portions of each side frame a rectangular frame secured to the upper and lower bars of the side frame and extending inwardly therefrom to receive the springs, whether the latter be groups of coiled or elliptic springs, for the bolster, which with the construction presented may be of the minimum length.

The invention and satisfactory means for carrying the same into effect may be fully understood from the detailed description hereinafter presented, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of a diamond truck embodying my invention, the wheels and the pedestal-frames for the axle-boxes being omitted, because they form no part of the present invention. Fig. 2 is a top view, partly broken away, of same; and Fig. 3 is a sectional view of same on the dotted line 3 3 of Fig. 1.

In the drawings, 10 designates the upper arch-bar, 11 the lower arch-bar, and 12 the tie-

bar, of the side frames of the truck, said side frames being duplicates of each other.

Intermediate the central portion of the upper and lower bars of each side frame is secured an open frame 13, comprising the vertical members 14 14, the lower horizontal member 15, extending inwardly from the lower ends of said vertical members, and the upper horizontal members 16 16, extending outwardly from the upper ends of said vertical members 14 14, said frame 13 being preferably in one integral piece of metal and defining a suitable rectangular space for the ends of the bolster and their springs or other supports. (Not shown.) The lower member 15 of the frame 13 is secured by bolts 17, passing through said member 15 and also through the lower arch-bar and tie-bar and being adjacent to the lower ends of the vertical members 14, and the upper members 16 are secured by bolts 18, which pass through the box strap-plate 19, the aforesaid upper arch-bar 10, the horizontal members 20 of the transoms 21, and said upper members 16.

The frame 13 at its outer edge is preferably flush with the outer vertical edge of the side frame, and in the preferred construction as a whole the said frame 13 at its inner edge extends inwardly to a substantial distance beyond the inner vertical edge of said side frame, whereby the said frame 13 is made to constitute a substantial structure of great strength and durability and affording not only a means for connecting the upper and lower bars of the side frame and of receiving the ends of the transoms, but furnishing a substantial reinforcement of said transoms at the inner sides of the side frames and also a suitable flooring or support (represented by the member 15) to receive the groups of coiled springs (not shown) upon which the ends of the bolster (not shown) are usually supported. The invention is not confined to the employment of coiled springs for the support of the ends of the bolster, since, as is well known, car-truck bolsters may be supported upon elliptic or semi-elliptic springs, and when it is desired to employ such springs it will be found that the present invention presents a structure capable of supporting the hangings



for such springs, as will be hereinafter mentioned. The frame 13 is therefore a substantial frame, extending intermediate the upper and lower bars of the side frame and being greater in width than the width of the side frame, so that it (said frame 13) may extend inwardly beyond and from the side frame to reinforce the transoms and afford abundant space for the bolster and its springs, it being possible with the present construction to employ a bolster of the minimum length whether coiled springs or elliptic or semi-elliptic springs are used for supporting the same.

The transoms 21 are of angle-iron formation, and in the preferred construction these transoms are arranged as illustrated in the drawings, the horizontal members 20 of the transoms being between the upper members 16 of the frame 13 and the lower surfaces of the upper arch-bar 10, and the vertical members of said transoms being against the facing vertical sides of the members 14 of said frame 13, to which members 14 the said transoms are preferably being secured by rivets 22. The transoms 21 connect, as usual, the side frames of the truck, and said transoms extend from the outer edge of the frame 13 at one side of the truck to the outer edge of the like frame at the other side of the truck, the end portions of said transoms being in contact with the upper portion of said frames 13, whereby they become reinforced and strengthened by said frames.

The transoms 21 due to their construction and the fact that their upper horizontal members are intermediate the upper arch-bar and the members 16 of the frame 13 are rendered extremely durable and capable of supporting any parts which it may be desired to suspend from them—as, for instance, hangers for elliptic springs to receive the ends of the bolster. The transoms when arranged as shown are at their ends supported by the frames 13, and with said frames 13 afford a very durable structure capable of resisting the usual strains which come upon car-truck transoms, and also of supporting any parts which it will be desired to suspend from said transoms.

The box strap-plate 19 may be in one or more pieces, but is preferably in one integral

piece, and in the present instance said strap rests upon the upper arch-bar 10 and at its end portions extends over and upon the upper members 20 of the transoms 21, to which said ends of said strap 19 are secured by bolts 23. The strap-plate 19 does not cover the space at the inner edge of the side frames and intermediate the transoms, and the end portions of the strap 19 are the important parts thereof, although increased strength is secured when the strap is in one integral piece, as shown.

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

1. In a car-truck, the side frames comprising upper and lower bars, and the frame 13 intermediate said bars and comprising the vertical members 14, outwardly-extending upper members 16 and inwardly-extending lower member 15, said frame 13 being interposed between the upper and lower bars of the side frame and at its inner portions extending inwardly beyond said side frame, combined with the angle-iron transoms connecting said side frames and at their end portions engaging said members 16 and the upper portion of said members 14, and means for securing said transoms and frame 14 to said side frames; substantially as set forth.

2. In a car-truck, the side frames comprising upper and lower bars, and the frame 13 intermediate said bars and comprising the vertical members 14, outwardly-extending upper members 16 and inwardly-extending lower member 15, said frame 13 being interposed between the upper and lower bars of the side frame and at its inner portions extending inwardly beyond said side frame, combined with the angle-iron transoms 21 connecting said side frames and engaging said members 14 and 16, the strap-plate 19, and means for securing said strap-plate, upper bar, frame 13 and transoms together; substantially as set forth.

Signed at New York, in the county of New York and State of New York, this 24th day of August, A. D. 1903.

BENJAMIN W. TUCKER.

Witnesses:

CHARLES C. GILL,  
ANNA V. BRODERICK.