

No. 678,802.

Patented July 16, 1901.

C. VANDERBILT.
CAR TRUCK.

(Application filed Mar. 15, 1900.)

(No Model.)

4 Sheets—Sheet 1.

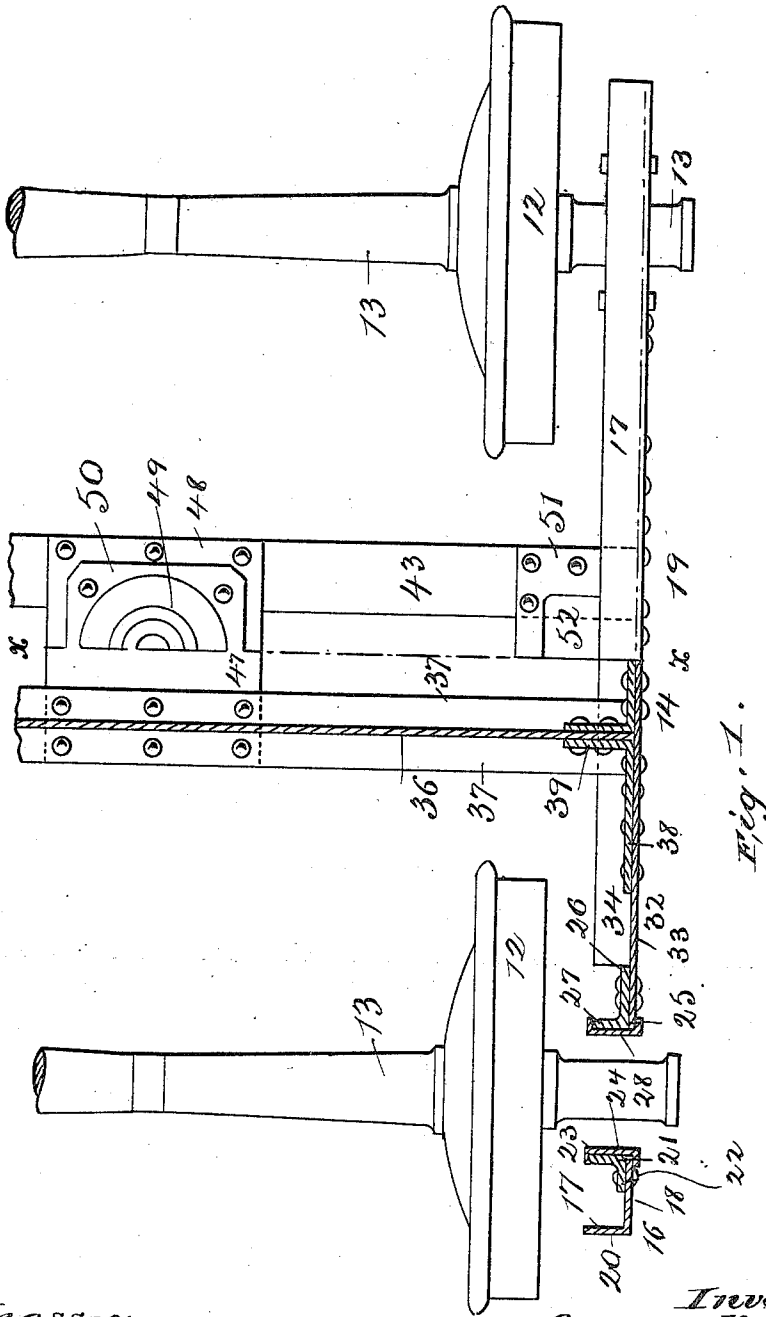


Fig. 1.

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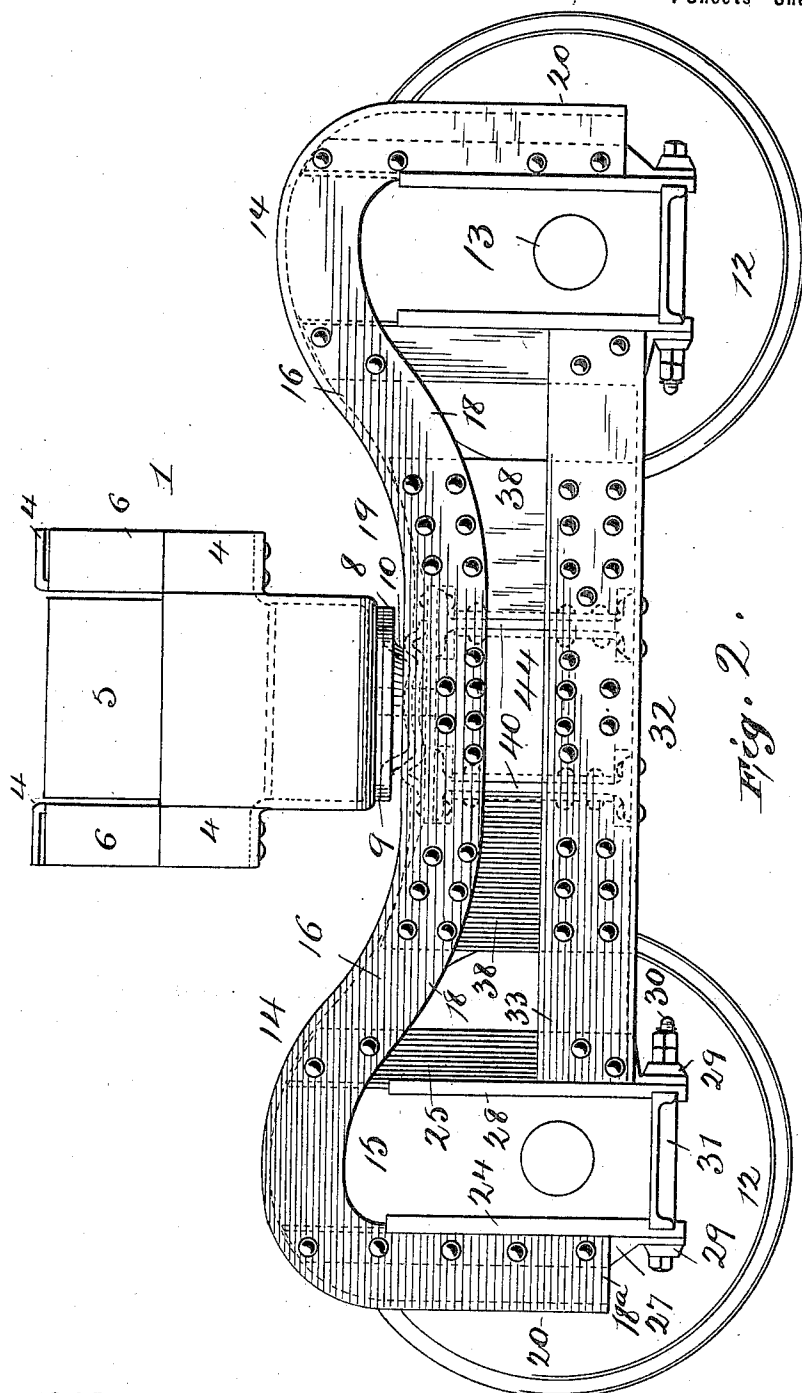


Fig. 2.

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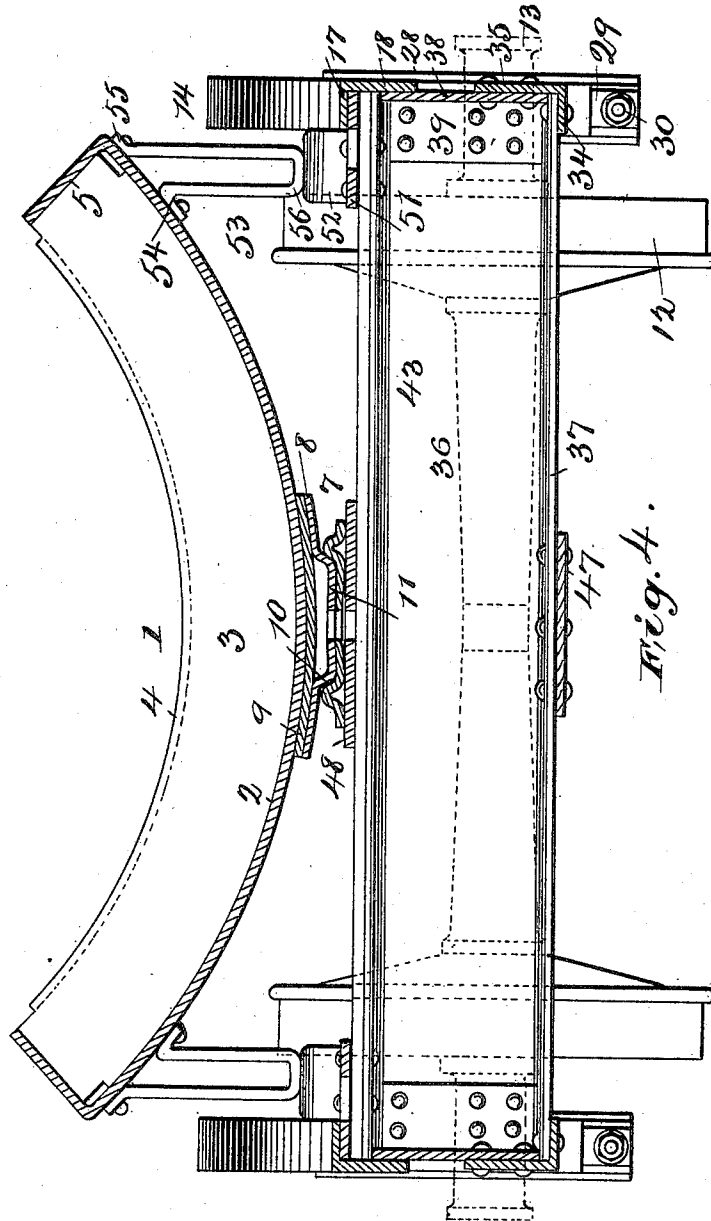
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Witnesses:
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UNITED STATES PATENT OFFICE.

CORNELIUS VANDERBILT, OF NEW YORK, N. Y.

CAR-TRUCK.

SPECIFICATION forming part of Letters Patent No. 678,802, dated July 16, 1901.

Original application filed December 11, 1899, Serial No. 739,935. Divided and this application filed March 15, 1900. Serial No. 8,730. (No model.)

To all whom it may concern:

Be it known that I, CORNELIUS VANDERBILT, a citizen of the United States, residing at No. 608 Fifth avenue, in the city of New York, borough of Manhattan, county and State of New York, have invented certain new and useful Improvements in Car-Trucks, of which the following is a specification.

My invention has for its object the construction of a car-truck with as few parts as possible, and where feasible those parts are to be made of commercial shapes of iron, so as to avoid the necessity of expensive machinery in the construction of the parts, and, further, to provide a truck which may be readily and economically made and assembled and which may be kept in repair at a comparatively small expense, at the same time providing a simple and efficient structure.

The subject-matter of the present application relates to certain improvements disclosed in an application for patent for tank-car, filed by me on the 11th day of December, 1899, Serial No. 739,935, and of which this case is a division and to which cross-reference is made.

My invention therefore resides in the details of construction and combination of parts hereinafter described and finally pointed out in the claims.

In the drawings forming part of this specification, Figure 1 is a plan view, partly in section; Fig. 2, a side elevation; Fig. 3, a longitudinal sectional elevation; and Fig. 4, a sectional elevation transversely of the truck on the line *x x*, Fig. 1.

The construction of the truck, as hereinafter described, may be beneficially employed in connection with the improvements in tank-car construction shown, described, and claimed in my application for patent therefor, filed December 11, 1899, Serial No. 739,935, of which this case is a division; but it is clear that the truck may be advantageously employed with other forms of cars. In my previously-described application I have shown and claimed a body-bolster of original construction, as at 1, Figs. 2 and 4, comprising the segmental base-web 2, side walls 3, side flanges 4, and end and side wings 5 and 6, forming in its entirety a segmental trough-like

bolster, as recited in said application, and although I prefer the construction of body-bolster any other desired form can be used in connection with the improvements in the truck now to be described.

It is constructed as follows: At 7 is the body center bearing of dish form, the annular flange 8 of which may be either secured directly to the horizontal web 2 of the body-bolster or to a cap-plate 9, both of which may be curved, Figs. 2 and 4, to take the curve of the web 2, or flat, as in Fig. 3, the said center bearing having the downwardly-inclined web 10 and a horizontal and dish-shaped crown-web 11 of the usual construction. At 12 are wheels, 13 the axles, (the journal-boxes being omitted for clearness of illustration,) and 14 the side frames, provided with axle-box yokes or pedestals 15. The side frames are composed of angle-iron side bars, the top chords 16 of which have an inwardly-extending horizontal web 17 and a pendent web 18. The side bars are formed with a depressed central portion between the pedestals and pendent ends or arms 20 at each end, which form the outer arms of the axle-box jaws or pedestals. To complete the jaw and provide a flat bearing-surface therein for the journal-boxes, I have secured to the arms 20 the outer jaw-bars 21, of angle-iron, the webs 22 of which are longitudinally disposed and riveted to the pendent web 18 of the arms 20, the other webs 23 being transversely disposed and extending inwardly to form with the usual face-plates 24, which are secured to the jaw-bar by countersunk rivets in the usual way, the outer jaw-bar or pedestal-arm for the axle-box, the inner jaw-bar 25, with its web 26, being secured to the web 18 of the side bar, and its other web 27 provided with the face-plate 28, as already described. The web 18 forms the bearing for the securement of the bar 21 thereto throughout substantially the latter's entire length, Fig. 3, while the jaw-bar 25 has only the normal drop of the web 18 for the part of its riveting-surface. For this reason the web 26 of the bar 25 is made wider, giving greater strength to resist the strain. Both the jaw-bars have their webs 22 26 cut away at or adjacent the axle-box bottom plane

to present the transverse webs 23 27 flat to the thimble 29, through which the tie-bolt 30 passes, the usual cross-bar 31 extending between the face-plates 24 28, through which the tie-bolt 30 also passes, nuts on the end of the tie-bolt securing the whole together. The lower end of the jaw-bars 21 25 are connected longitudinally (the latter directly) by the lower chord 32 of the angle-iron, the upright web 33 of which is riveted to the jaw-bar 25, the horizontal web 34 of which being cut away at 35 to receive the web 26 of the jaw-bar. In this way but a few pieces of commercial metal are utilized to construct the side frames, which are consequently light and are of particular strength, enabling them to resist the strain incidental to maintaining the parallelism of the axles and running.

Means for forming the bolster and strengthening the structure against torsional strains are provided as follows: Extending between the upper and lower chords 16 32 are the I-beams 36, the lower flanges 37 of which are riveted to the web 34 of the lower chord, thereby effectively tying the lower chords together transversely.

At 38 are compression-plates riveted, respectively, to the webs 18 and 32 of the upper and lower chords on each side of the I-beams and having inwardly-extending flanges 39, secured to the upright compression-web 40 of the I-beams. Recesses 41 and 42 are cut in the upper and lower corners of these plates to clear the flanges 37 and 43 of the I-beams, Fig. 3. Between the I-beams further compression-plates 44 are riveted to the webs 18 32 of the upper and lower chords and by their flanges 45 to the webs 40 of the I-beams, the angles of the plate 44 being recessed, as at 46, to clear the I-beam flanges 37 43. Plates 47 48 are riveted onto the flanges 37 43 of the I-beams, both plates tying the beams together between the ends of said beams, while the plate 48 supports a pressed-steel truck center bearing 49, the flange 50 of which is secured to the top plate 48.

Extending across and between the top flanges 43 of the truck I-beam is the flanged base-plate 51 of the truck side bearings 52, made of pressed steel, preferably, (or of cast metal,) the flange 51 being riveted to the said beams, and the body-bolster 1 is provided with pendent side bearings 53, Fig. 4, preferably made of strap-iron, the ears 54 55 which are disposed to the curve of and fastened to the bottom web 2 of the body-bolster, the cross-web 56 bearing on the top of the truck side bearing, as shown in said figure.

The entire structure embodies lightness, strength, economy, and spacious clearances between the axle-box pedestals for the location of the body-bolster, allowing of a low-placed car-body.

Having described my invention, I claim—
1. In a car-truck, the combination with the upper chord, having a pendent arm, consist-

ing of an angle-iron provided with a vertical side web and an inwardly-projecting horizontal upper web, of a face-plate substantially continuous with and secured to said pendent arm to form the outer arm of the axle-box jaws or pedestals, a lower chord, and a second upright face-plate extending between the upper and lower chords to form the inner arm of the axle-box jaws or pedestals, substantially as described.

2. In a car-truck, the combination with the upper chord, having a pendent arm, consisting of an angle-iron provided with a vertical side web and an inwardly-projecting horizontal upper web, of a face-plate substantially continuous with and secured to said pendent arm to form the outer arm of the axle-box jaws or pedestals, of a lower chord, a second upright face-plate extending between the upper and lower chords to form the inner arm of the axle-box jaws or pedestals, and spaced cross-beams supported by and secured immediately to said lower chords, substantially as described.

3. In a car-truck, the combination with the upper chord, having a pendent arm, consisting of an angle-iron provided with a vertical side web and an inwardly-projecting horizontal upper web, of a face-plate secured to said pendent arm to form the outer arm of the axle-box jaws or pedestals, a lower chord provided with a vertical side web and an inwardly-projecting horizontal lower web or flange, a second upright face-plate extending between the upper and lower chords to form the inner arm of the axle-box jaws or pedestals, and cross-beams supported by and secured immediately to said inwardly-projecting web or flange of said lower chords, substantially as described.

4. In a car-truck, the combination with the upper chord, having a pendent arm, consisting of an angle-iron provided with a vertical side web and an inwardly-projecting horizontal upper web, of a face-plate substantially continuous with and secured to said pendent arm to form the outer arm of the axle-box jaws or pedestals, of a lower chord provided with a vertical side web and an inwardly-projecting horizontal lower web or flange, a second upright face-plate extending between the upper and lower chords to form the inner arm of the axle-box jaws or pedestals, spaced cross-beams supported by and secured immediately to the inwardly-projecting web of said lower chords, and compression-plates extending between the chords, provided with lateral flanges secured to the cross-beams, substantially as described.

5. In a car-truck, the combination with the side frames comprising the upper chord having a pendent arm, a face-plate provided with an inwardly-projecting transverse web secured to said pendent arm to form the outer arm of the axle-box jaws or pedestals, a lower chord, a second upright face-plate, having an

inwardly-projecting transverse web, extending between the upper and lower chords to form the inner arm of the axle-box jaws or pedestals, and means for connecting the lower ends of the transverse webs of said face-plates, substantially as described.

6. In a car-truck, the combination with the side frames comprising the upper chord having a depressed central portion and a pendent arm, a face-plate provided with an inwardly-projecting transverse web secured to said pendent arm to form the outer arm of the axle-box jaws or pedestals, a lower chord provided with a vertical side web and an inwardly-projecting horizontal lower web or flange, a second upright face-plate, having an inwardly-projecting transverse web, extending between the upper and lower chords to form the inner arm of the axle-box jaws or pedestals, the inwardly-projecting flange of said lower chord being cut away to receive said second upright face-plate and means for connecting the lower ends of the transverse webs of said face-plates, substantially as described.

7. A metal bolster, U-shaped in lateral cross-section, and segmental longitudinally.

8. A metal bolster U-shaped in lateral cross-section, segmental longitudinally, and having closed and inclined ends.

9. A metal bolster U-shaped in lateral cross-section segmental longitudinally, having closed and inclined ends, and surmounting laterally-extending flanges.

10. A metal bolster U-shaped in lateral cross-section, segmental longitudinally, and having closed ends.

11. A metal bolster U-shaped in lateral cross-section, segmental longitudinally, and having upwardly-curved laterally-extending flanges.

12. A metal bolster U-shaped in lateral cross-section segmental longitudinally, and having inclined end pieces.

13. A metal bolster U-shaped in lateral cross-section, having inclined end pieces, and inclined laterally-projecting wings adjacent the end pieces.

14. A metal bolster U-shaped in lateral cross-section having inclined laterally-projecting wings.

15. A bolster having the segmental base-web 2, similarly-disposed side webs 3, and inwardly-inclined end pieces 5.

16. A bolster having a segmental base-web 2, similarly-disposed side webs 3, and outwardly-extending segmental flanges 4.

17. A bolster having a base-web 2, side

webs 3, and wings 6 extending outwardly from the side webs.

18. A bolster having the base-web 2, side webs 3, and inwardly-inclined webs 6 extending outwardly from the side webs.

19. A bolster having a segmentally-disposed base 2, side webs 3, and the inclined wings 6 extending from the side webs.

20. A bolster having a segmentally-disposed base 2, side webs 3, inclined wings 6 extending from the side webs, and the intermediate and inclined end pieces 5 extending from the base-web.

21. A bolster having the segmentally-disposed base 2, side webs 3, the inclined wings 6 extending from the side webs, intermediate inclined end pieces 5 extending from the base-web, and the segmental flanges 4 extending from the side webs.

22. A bolster having the base-web 2, side webs 3, and extensions 5 separated from the base-webs by slotting.

23. A bolster having the base and side webs 2 3, and wings 6 separated from the side webs by slotting.

24. A bolster having base and side webs 2, 3, flanges 4, and wings 6, and recesses formed at the upper angle of the flange and wings.

25. A longitudinally-curved body-bolster provided with a center bearing and pendent side bearings, substantially as described.

26. A longitudinally-curved body-bolster, U-shaped in lateral cross-section and provided with pendent side bearings, substantially as described.

27. A longitudinally-curved body-bolster, U-shaped in lateral cross-section, provided with center bearings and U-shaped pendent side bearings, substantially as described.

28. In a car-truck, the combination with the frame and a truck-bolster, of a body-bolster of segmental form, having ends elevated above the truck-bolster and a depressed intermediate portion, center bearings between said intermediate portion of the body-bolster and the truck-bolster, side bearings on the truck-bolster, and side bearings pendent, from the elevated ends of the body-bolster over the truck side bearings, substantially as described.

Signed in the city, county, and State of New York this 12th day of March, 1900.

CORNELIUS VANDERBILT.

Witnesses:

DE F. LILLIS,
EDGAR A. ANDERSON.

It is hereby certified that in Letters Patent No. 678,802, granted July 16, 1901, upon the application of Cornelius Vanderbilt, of New York, N. Y., in the grant and headings of the printed specification and drawings and in line 7, page 1, of the specification the title of the invention was erroneously written and printed "Car-Trucks," whereas the said title should have been written and printed *Truck and Bolster Construction for Railway-Cars*; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed, countersigned, and sealed this 24th day of September, A. D., 1901.

[SEAL.]

F. L. CAMPBELL,
Assistant Secretary of the Interior.

Countersigned:

F. I. ALLEN,
Commissioner of Patents.