

No. 836,372.

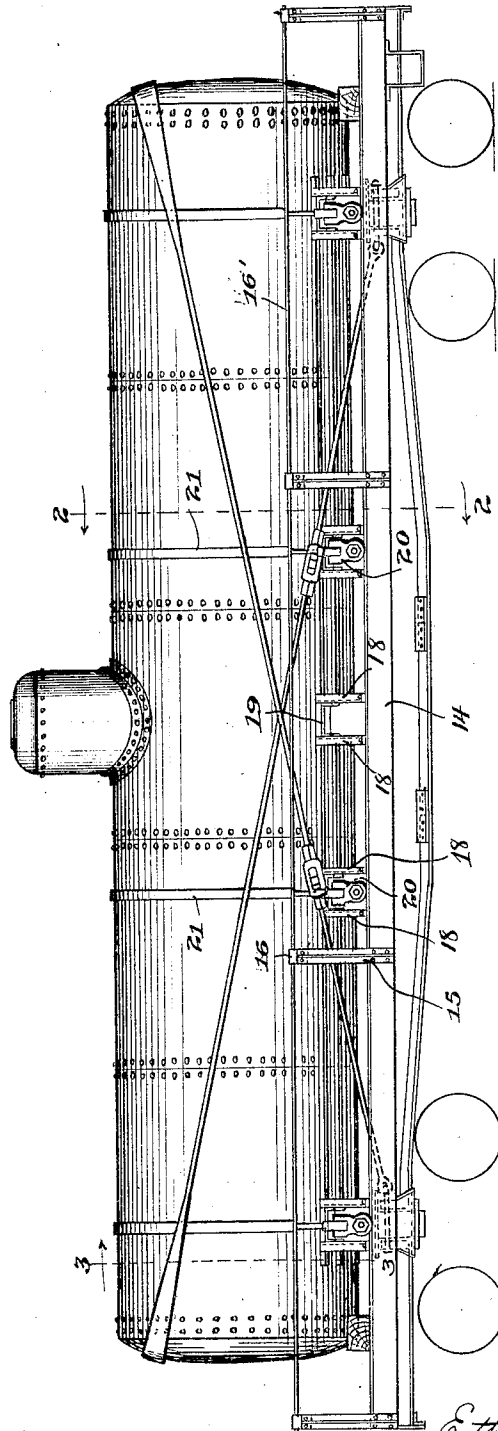
PATENTED NOV. 20, 1906.

E. I. DODDS.
TANK CAR.

APPLICATION FILED JULY 24, 1905.

3 SHEETS—SHEET 1.

Fig. 1.



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3 SHEETS—SHEET 2.

Fig. 2.

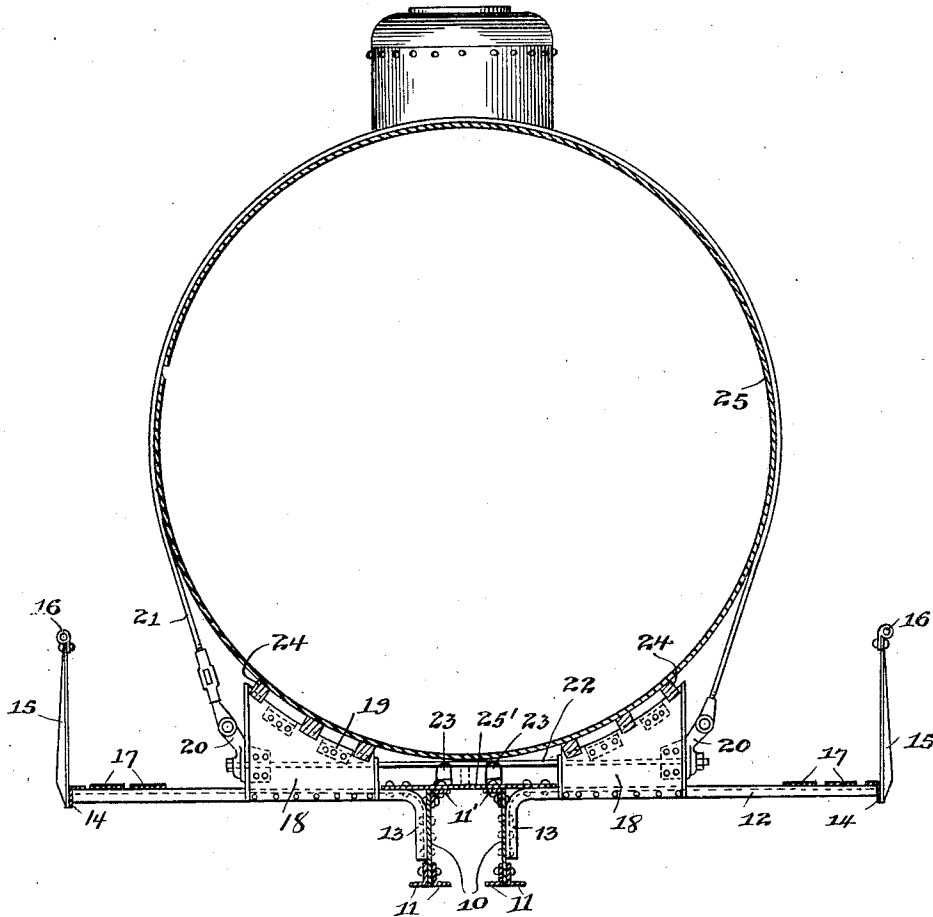
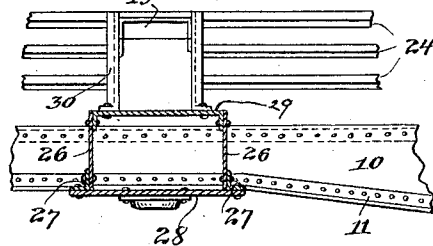


Fig. 4.



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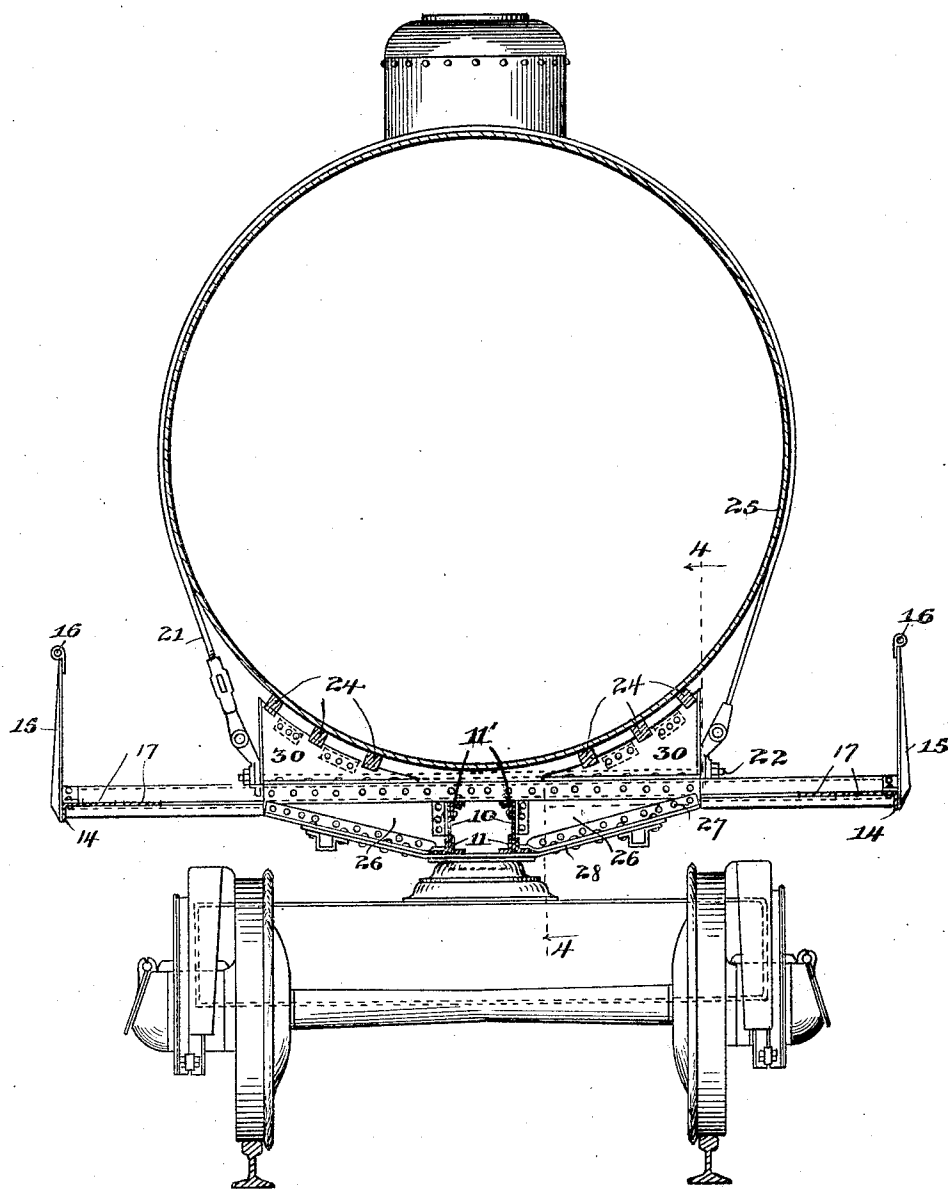
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3 SHEETS—SHEET 3.

Fig. 3.



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UNITED STATES PATENT OFFICE.

ETHAN I. DODDS, OF PULLMAN, ILLINOIS, ASSIGNOR TO THE PULLMAN COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

TANK-CAR.

No. 836,372.

Specification of Letters Patent.

Patented Nov. 20, 1906.

Application filed July 24, 1905. Serial No. 270,997.

To all whom it may concern:

Be it known that I, ETHAN I. DODDS, a citizen of the United States, residing at Pullman, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Tank-Cars, of which the following is a specification.

My invention relates to tank-cars, and is more especially directed to the construction of the underframe and supporting means for the tank proper.

By my improved structure I am enabled to produce a car embodying parts of commercial shapes and standard rolled plates with very little cutting, and I secure withal a strong but light construction.

New and useful improvements will be found in the body-bolsters, cross-bearers, hand-rail supports, center sills, tank-supports, and other parts of the car.

I have illustrated on the accompanying drawings one embodiment of my invention, wherein—

Figure 1 is a side elevation of the car. Fig. 2 is an enlarged cross-section of the car shown in Fig. 1 on the line 2 2 of the latter, the longitudinal straps for the tank being omitted. Fig. 3 is an enlarged cross-section of the car shown in Fig. 1 on the line 3 3 of the latter, and Fig. 4 is a detail cross-section of the body-bolster on line 4 4 of Fig. 3 and shows in addition the tank-support.

The center sill comprises two spaced plates 10, to the lower edge of each of which are attached on either side tension angle-bars 11. To the inside upper edge of each is secured a compression angle-bar 11'. The cross-bearers 12 consist of bent channel-beams, the downwardly-bent portions 13 being secured to the center sills 10 by means of rivets passing through their webs. Longitudinal angle-bars 14, constituting side sills, connect the outer ends of the cross-bearers and the body-bolsters. Side stakes 15, which are formed by cutting the web of an I-beam on the bias, are riveted to the angle-bars 14 and have secured at their upper ends loops 16 for holding a hand-rail 16'. Boards 17 extend across the upper surfaces of the cross-bearers and body-bolsters and serve as a partial flooring. On each side of the center sills curved channel-supports 18 are secured, one to each flange of the cross-bearer 12, the up-

per portions of the supports being spaced apart by short channel-sections 19. Anchors 20 are secured to each pair of adjacent supporting-plates, and to these anchors are fastened straps 21, which pass over the tank 25 and hold the same in place. A tie or tension rod 22, Fig. 2, passes through each pair of opposite anchors 20 and serves to hold them in place, as well as strengthening the tank-supports. It also acts as a tension means cooperating with the cross-bearers 12. The rod 22 passes over one or more struts 23, secured to the upper side of the longitudinal plate 25'. This latter plate extends from body-bolster to body-bolster and overlies the center sills 10 and overlaps the webs of the cross-bearers to which it is riveted, it being also fastened to the angle-bars 11'. Plate 25' serves as a compression-plate longitudinally and as a tension-plate transversely.

The body-bolsters each comprise two tapering plates 26, provided at their lower edges with compression angle-bars 27, to which the connecting compression-plate 28 is riveted. The plates 26 are spaced apart at their upper ends by means of a channel-beam 29, which is secured to the plates by rivets passing through its flanges. The tank-supporting plates 30, which are similar to the plates 18 above mentioned, are riveted to the upper surface of the plate 29 and are spaced apart with channel-sections 19', while the longitudinal wooden supports 24 are secured to the metal supports 18 and 30 in any suitable manner.

It will be obvious from the construction described and shown that my invention provides a tank-car with a light underframe of great strength. The frame is also made of a number of comparatively small parts, so that it may be readily and economically repaired in case any of them are injured.

To one skilled in the art to which my invention pertains various modifications will be apparent which will fall within the spirit and substance of my invention as set forth in the following claims.

This patent is intended to embrace only so much of the disclosure made herein as is covered by the claims.

I claim—

1. In a car, the combination of a center sill, and a cross-bearer having a bent end riv-

eted to said center sill, substantially as described.

2. In a car, the combination of a center sill, and a cross-bearer having a downwardly-bent end riveted to said center sill, substantially as described.

3. In a car, the combination of a center sill, and a channel cross-bearer having a bent end the web of which is secured to said center sill, substantially as described.

4. In a car, the combination of two center sills, cross-bearers having bent ends secured to said center sills, and a tension-plate fastened to said cross-bearers, substantially as described.

5. In a car, the combination of two center sills, channel cross-bearers having bent ends the webs of which are riveted to said center sills, and a tension-plate riveted to the webs of said cross-bearers, substantially as described.

6. In a car, the combination of two center sills, each having an angle-bar secured thereto adjacent to one edge, channel cross-bearers having bent ends fastened to said sills, and a tension-plate riveted to the webs of said cross-bearers and to said angle-bars, substantially as described.

7. In a car, the combination of center sills, two cross-bearers secured to said center sills in alignment and projecting outwardly from said center sills, a pair of tank-supporting plates fastened to each cross-bearer, an anchor secured to each pair of tank-supporting plates, and a tie-rod connecting said anchors, substantially as described.

8. In a car, the combination of a plurality of tank-supporting members, and a tie-rod connecting said members, substantially as described.

9. In a car, the combination of a plurality of tank-supporting members, an anchor secured to each member, and a tie-rod connecting said anchors, substantially as described.

10. In a car, the combination of a plurality of tank-supporting members, an anchor secured to each member, a strut, and a tie-rod

connecting said anchors and passing over said strut, substantially as described.

11. In a car, the combination of two tank-supporting members, each comprising a pair of spaced plates, an anchor secured to each of said pairs of plates, and a tie-rod connecting said anchors, substantially as described.

12. In a car, the combination of two tank-supporting members, each comprising a pair of spaced plates, an anchor secured to each of said pairs of plates, one or more struts, and a tie-rod connecting said anchors and passing over said strut or struts, substantially as described.

13. In a car, a hand-rail, and supports therefor comprising side stakes T-shaped in cross-section, substantially as described.

14. In a car, a hand-rail, and supports therefor, comprising side stakes formed of an I-beam whose web has been cut on a bias, substantially as described.

15. In a car, the combination of a center sill, a body-bolster comprising two spaced plates, an angle-bar secured to each plate adjacent to its lower edge, a channel tension-plate whose flanges are secured to said plates adjacent to their upper edges, and two tank-supporting members riveted to said channel tension-plate, substantially as described.

16. In a car, the combination of a pair of center sills, a pair of cross-bearers attached thereto, said cross-bearers having their greatest transverse dimensions disposed horizontally, and a tension-plate passing over said center sills and connected to said cross-bearers, substantially as described.

17. In a car, the combination of a pair of center sills, a plurality of cross-bearers attached thereto, said cross-bearers having their greatest transverse dimensions disposed horizontally, and a plate extending longitudinally of said car attached to said cross-bearers, substantially as described.

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