No. 696,150. Patented Mar. 25, 1902.

# M. TOLTZ & L. W. HILL.

## RAILROAD CAR.

(Application filed Dec. 19, 1901.)

(No Model.) 2 Sheets—Sheet 1.

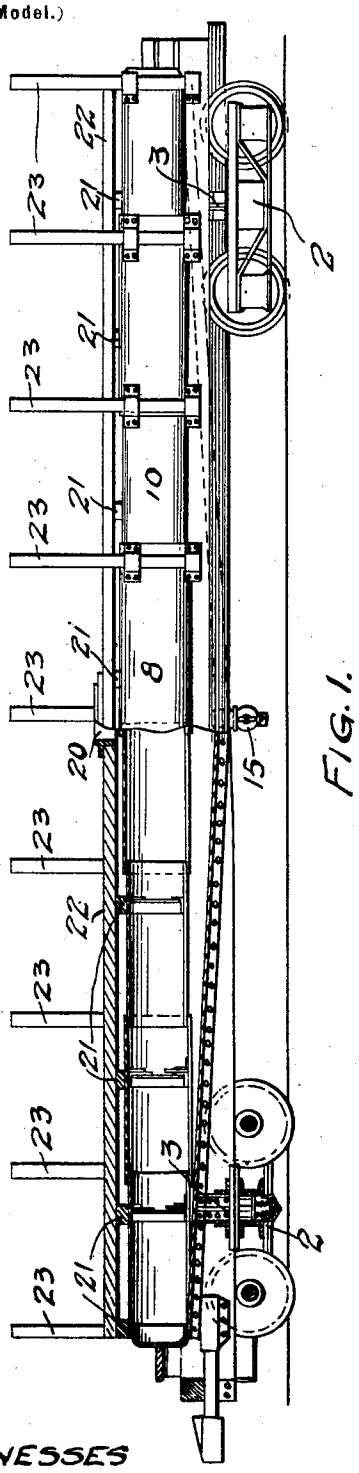



FIG. 1.

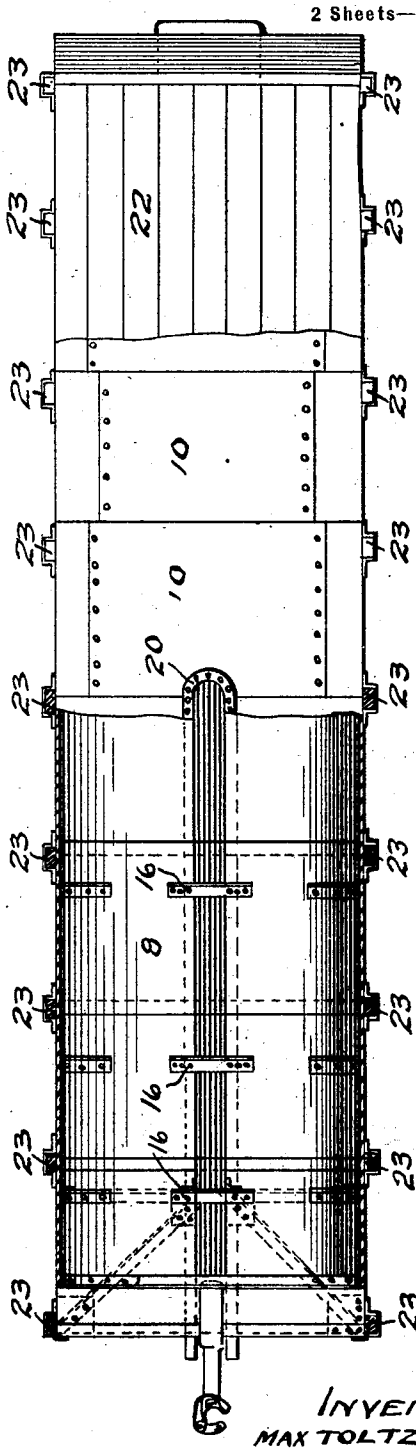



FIG. 2.

WITNESSES
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M. C. Noonan

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LOUIS W. HILL
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THEIR ATTORNEY.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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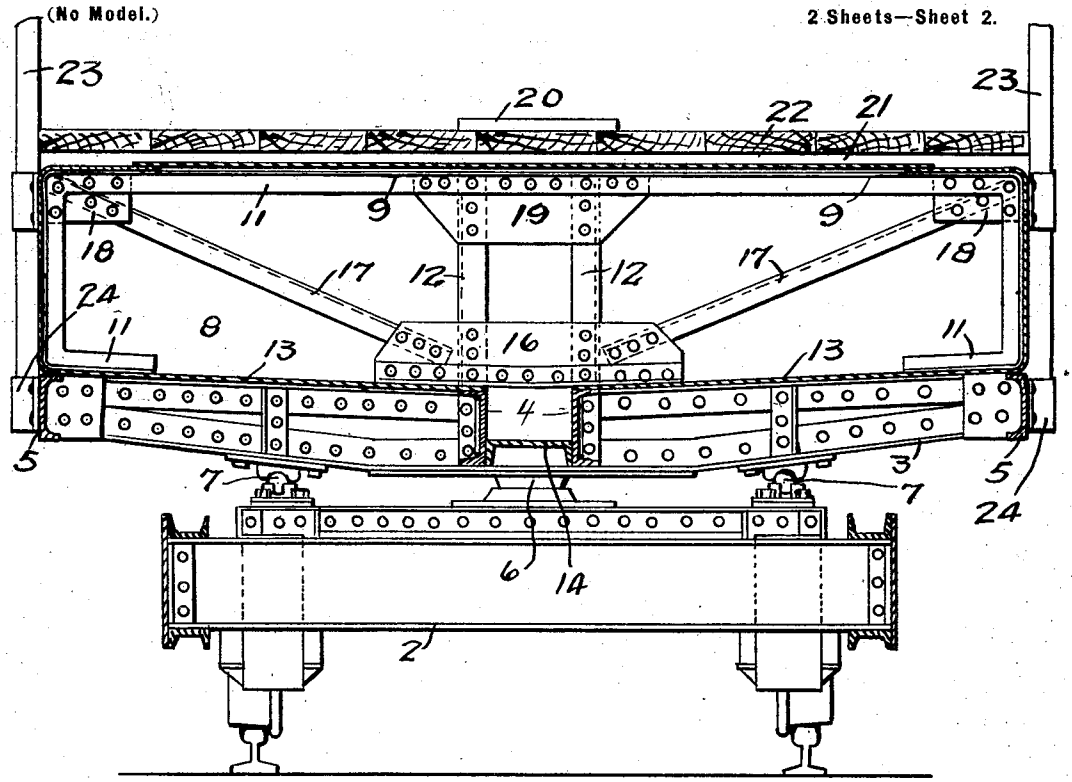



FIG. 3.

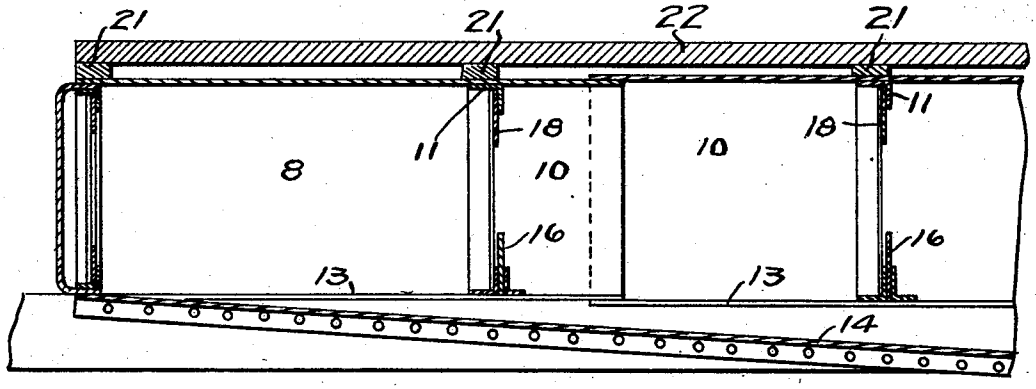



FIG. 4.

WITNESSES
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# UNITED STATES PATENT OFFICE.

MAX TOLTZ AND LOUIS W. HILL, OF ST. PAUL, MINNESOTA.

## RAILROAD-CAR.

SPECIFICATION forming part of Letters Patent No. 696,150, dated March 25, 1902.

Application filed December 19, 1901. Serial No. 86,574. (No model.)

*To all whom it may concern:*

Be it known that we, MAX TOLTZ and LOUIS W. HILL, of the city of St. Paul, county of Ramsey, State of Minnesota, have invented certain new and useful Improvements in Railroad-Cars, of which the following is a specification.

This invention relates to railroad-cars, and particularly to tank-cars; and the object of the present invention is to provide a combination tank and freight car.

As usually constructed the tank-cars are devoted exclusively to the conveyance of oils and other liquids, and such cars often have to be hauled great distances and then returned empty, thereby materially increasing the cost of the delivery of the contents of the cars.

The particular object of this invention is to provide a tank-car which will hold and carry the maximum weight of liquid and which when empty may be utilized as an ordinary platform or box car.

The invention consists generally in the combination, with suitable trucks, of a suitable tank arranged thereon and provided with a substantially flat top, for which side posts may be provided or which may serve as the floor of a box-car body.

The invention also consists in the constructions and combinations of parts, all as hereinafter described, and particularly pointed out in the claims.

The invention will be more readily understood by reference to the accompanying drawings, forming part of this specification, and in which—

Figure 1 is a side elevation, partly in section, of a car constructed in accordance with our invention. Fig. 2 is a plan view of the same, partly in section. Fig. 3 is a transverse vertical section of the car. Fig. 4 is a partial longitudinal section.

In the drawings, 2 2 represent the car-trucks of any suitable or preferred construction, 3 3 the cross-beams, 4 4 the center sills, and 5 5 the side sills, all of which may be of any preferred or usual construction. The car-body may be supported upon the trucks in any preferred manner, the load being carried directly upon the sills by a suitable frame. We have here shown the truck provided with a center bearing 6 and with side bearings 7 similar to those shown and described in a companion application filed by Max Toltz October 18, 1898, Serial No. 693,900. Secured upon the cross-beams and the sills is a suitably-constructed tank-body 8, preferably the full width of the car and having a flat or substantially flat upper surface 9. As here shown, the tank-body is preferably made of overlapping plates 10, (see Fig. 4,) and it is suitably braced and supported upon the interior by means of the angle-irons 11 and posts 12. The bottom 13 preferably slopes inward from the outside toward the center, and at the center between the center sills 4 is an inclined gutter or trough formed by arranging a section of the floor 14 between the two sills 4 and inclining it from each end of the car toward the center, where the outlet-pipe 15 (see Fig. 1) is located. We prefer also to provide a series of angle-iron plates 16, that are arranged across the space between the sills 4 4 and are secured to the two sides of the bottom, thereby serving to tie the two sides firmly together. We may also provide a series of diagonal tie-rods 17, extending from the angle-plate 16 to other plates 18, located in the corners of the tank. We may also provide suitable angle-iron plates 19 at the top of the tank, secured to the uprights 12, as shown in Fig. 3. The tank-body thus formed is completely braced and tied together and capable of holding all of the oil or other liquid that can be placed therein. The tank will be provided, preferably, at the center with the usual manhole 20. The upper surface of the tank being flat and substantially level, the car may be used as an ordinary flat-car, or by putting sides and a roof thereto it may be used as an ordinary box-car.

We have here shown a series of cross-bars 21, resting upon the top of the tank, and a floor 22, arranged thereon. We have also shown side posts or stakes 23, secured by having their ends projecting into or through the straps 24, secured to the outside of the tank-body. We do not wish to limit ourselves, however, to any particular means for bracing the tank-body or to any particular construction thereof, as our invention will be found in any tank-car having a substantially flat or level top and made substantially the full

width of the car and capable of being used for a flat or box car for carrying freight of any kind other than liquid, while the car is also adapted for all of the purposes of an ordinary tank-car.

We claim as our invention—

1. The combination, with suitable trucks, of a tank mounted thereon and extending from side to side the full width of the car, said tank being provided with a substantially flat top and suitably braced within to enable it to support a load upon its flat top, and a trough provided in the bottom of said tank and extending longitudinally thereof between its center sills and being inclined from its ends toward its center, substantially as described and for the purpose specified.

2. The combination, with the trucks, of the shallow flat tank thereon, its top resembling that of a flat-car, the side and center sills of said tank, the depressed trough between the center sills, the cross-ties and the center posts, all substantially as shown and described.

3. The combination, with a car-platform, of a tank supported thereon and provided with a longitudinal gutter or trough along its central line, plates 16 bridging said trough, corner-plates 18 and tie-rods 17 connecting said plates 16 and 18, for the purpose specified.

4. The combination, with the car-trucks, of a car-body mounted thereon, a shallow tank 8 supported upon and of substantially the same width and length as said car-body and having a substantially flat top 9, angle-irons 11 rising vertically at the sides within said tank and extending across its top and having their ends turned inwardly and resting upon its bottom, and posts 12 provided within and bracing said tank near its center whereby it is adapted to support a load upon its flat top, substantially as described.

5. The combination, with the car-trucks, of a car-body mounted thereon, a shallow tank 8 supported upon and of substantially the same width and length as said car-body and having a substantially flat top 9, the angle-irons 11, the plates 19 and 16 provided at the top and bottom, respectively, of said tank near its middle, the posts 12 connecting said plates, the side plates 18, the tie-rods 17 connecting said plates 16 and 18 and all arranged within and bracing said tank, whereby it is adapted to support a load upon its flat top, substantially as described.

6. The combination, with the car-trucks, of a car-body having the center sills 4 4 and the side sills 5 5, an oil-tank supported upon said body said tank having a floor 13 inclined from the sides toward the center, sections 14 provided in the bottom of said tank between said sills 4 4 and inclined from the ends of said tank toward the center, whereby a gutter or trough is formed in the bottom of said tank, and an outlet-pipe provided in said gutter, substantially as described.

7. The combination, with the car-trucks, of the car-body mounted thereon and comprising the shallow tank 8 having a flat top, said tank resting upon the longitudinal sills described, the angle-irons 11 supporting the top of said tank, the ends of said angle-irons being braces for the sides of said tank, and being turned inwardly upon the bottom of the tank, and suitable vertical and cross braces provided within said tank, substantially as described.

8. The combination, with the car-trucks, of a car-body mounted thereon and having side sills 5 5 and center sills 4 4, and suitable cross beams or braces connecting the same, a tank supported upon and of substantially the same length and width as said car-body, a trough provided in the bottom or floor of said tank between said center sills, and plates 16 bridging said trough and securing the sides of said tank together, substantially as described.

9. The combination, with a car-platform having the side sills 5 5 and the center sills 4 4, of a tank supported thereon and provided with a longitudinal gutter or trough in its bottom, and the floor-section 14 provided between said center sills and forming the bottom of said trough, substantially as described.

10. The combination, with the car-platform, having side and center sills, of a tank supported thereon and having a flat top as described, the upright posts or standards 12 arranged at intervals within and near the middle line of said tank, and the bridging or strengthening plates 19 and 16 provided respectively at the top and bottom of said posts, substantially as described.

11. The combination, with the car-platform having side sills 5 5 and center sills 4 4, of the tank supported thereon and provided with a longitudinal gutter or trough in its bottom between said center sills and the plates 16 bridging said trough and tying the sides of the tank together, substantially as described.

12. The combination, with a car-platform, of a tank substantially the width of said platform and resting thereon and having a flat top, the upright posts 12 arranged at intervals within said tank, the plates 16 and 19 connecting said posts and tying the sides of the tank together, and the rods 17 extending diagonally from said plates 16 to the upper corners of said tank, for the purpose specified.

13. The combination, with a car-platform having side and center sills 5 5 and 4 4, of a tank mounted thereon and having a longitudinal trough or gutter in its bottom between said center sills, the bottom of said trough being raised at the ends above its middle portion, whereby space is provided between the center sills at the ends of the car-platform for the truck connections, substantially as described.

14. The combination, with the car-platform, of a tank supported thereon having a longitudinal trough or gutter along the central line of its floor or bottom, plates 16 bridging said trough, angle-irons 11 bracing and supporting the top of the tank, corner-plates 18

and tie-rods 17 connecting said plates 16 and 18, substantially as described.

15. The combination, with the car-platform, of a tank resting thereon, and having a substantially flat top, plates 16 bridging the center line of said tank and tying the sides of the same together, and diagonal tie-rods 17 connecting the upper corners of said tank with said plates 16.

16. The combination, with a car-platform, of a tank resting thereon, plates 16 arranged transversely in said tank and bridging its center line, plates 18 provided in the upper corners of said tank, and tie-rods 17 connecting said plates 16 and 18.

In testimony whereof we have hereunto subscribed our names, in the presence of two witnesses, this 16th day of October, 1901.

MAX TOLTZ.
LOUIS W. HILL.

In presence of—
C. C. MCELWEE,
H. H. PARKHOUSE.