

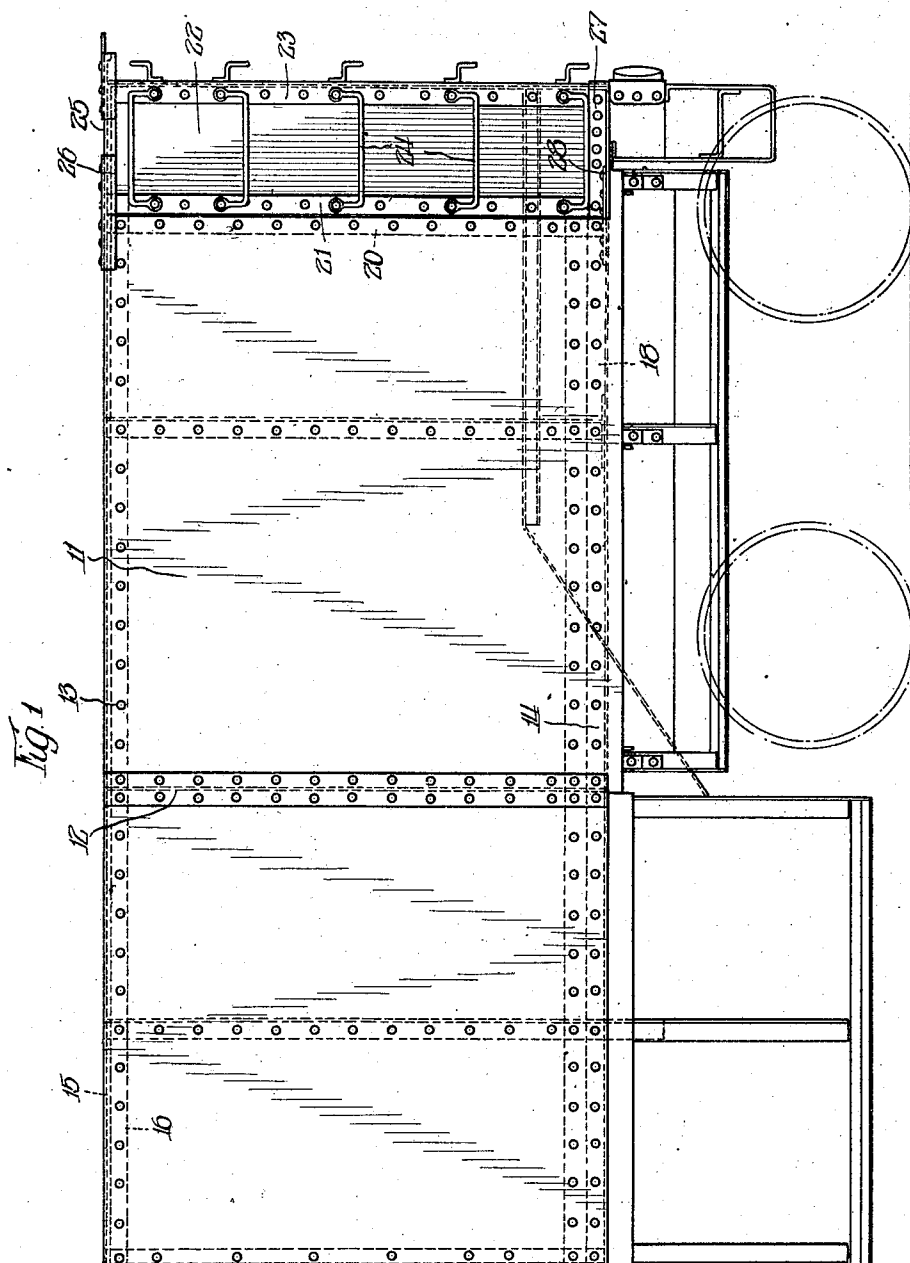
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1,618,008

D. HINDAHL

CAR CONSTRUCTION

Original Filed June 5, 1924 2 Sheets-Sheet 1



Witness:

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Inventor:

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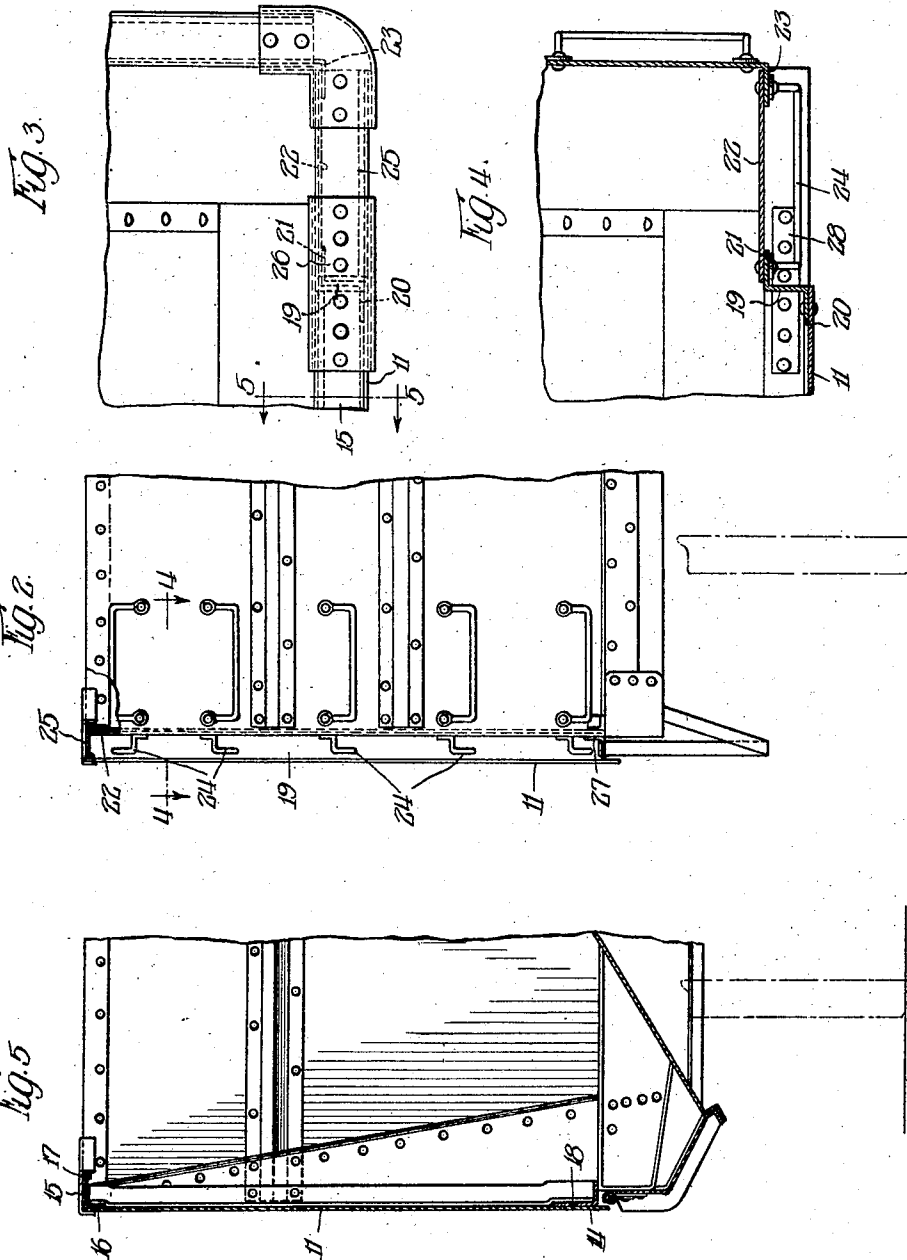
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Original Filed June 5, 1924 2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE.

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CAR CONSTRUCTION.

Application filed June 5, 1924, Serial No. 717,997. Renewed December 17, 1926.

This invention relates to a new and improved car construction and more particularly to a construction of cars of a maximum load type permitting the installation of a ladder upon the side of the car adjacent the end, with a minimum loss of carrying capacity.

In cars of the maximum load type, the car sides are placed upon the outside of the supporting side stakes and top and bottom chord of the side construction. The sides are thus located at the extreme limit permitted by the clearance requirements for railway cars and a maximum load is carried. In view of the location of the car side at the clearance limits it is impossible to provide the required side ladders extending beyond the car sides.

It is an object of the present invention to provide car construction of the maximum load type in which the side ladders are carried within the clearance limits with a minimum loss of carrying capacity.

It is a further object to provide a construction of this character which is simple in design, composed of standard structural shapes and is adapted for commercial production.

Other and further objects will appear as the description proceeds.

Broadly stated, my invention comprises a car having sides composed of a main central section, the wall of which is located outwardly of the supporting structure and end sections having their walls offset inwardly with respect to the wall of the main central portion.

I have illustrated a preferred embodiment of my invention in the accompanying drawing, in which—

Figure 1 is a side elevation of one-half of a car with my invention applied thereto;

Figure 2 is a fragmentary end elevation partly broken away to show the construction;

Figure 3 is a plan view of a corner of a car;

Figure 4 is a horizontal section taken on line 4—4 of Figure 2; and

Figure 5 is a vertical section taken on line 5—5 of Figure 3.

The car shown is of the maximum load type and its sides comprise the plates 11, the vertical members 12 located internally

of the car and the top chord 13 and bottom chord 14 also located internally of the car.

As shown in section in Figure 5, the upper chord of the side construction consists of the angle bar 15 having one leg extending horizontally and the other leg 16 secured to the side plate 11. The horizontal leg is provided upon its inner end with the strengthening bulb 17. The lower chord of the side comprises the angle bar 18.

The angle bars 15 and 18 and the side plate 11 end on a vertical plane in which is located the Z bar 19, as best shown in Figure 4. The leg 20 of the Z bar 19 is riveted to the vertically extending angle bar legs 16 and 18, and to the plate 11, the central portion of the Z bar extending inwardly at right angles to the car side. The inner leg 21 is secured to one edge of side plate 22 and the other edge of this plate 22 is secured to the car end at 23. The ladder rungs 24 are secured in place by means of certain of the rivets which connect the plate 22 with the Z bar 19 and with the car end construction. These rungs are now included within the car contour, as clearly shown in Figures 2 and 4.

As shown in the upper corner of Figure 2 the upper chord of the end side section consists of the angle bar 25, the vertical leg of which is secured to the plate 22 and the horizontal leg of which extends outwardly from this plate. It will be apparent, therefore, that the horizontal portion of the angle bar 25 is in prolongation of the horizontal portion of the angle bar 15. The adjacent ends of the two bars are covered by the junction plate 26 which is riveted to both angle members, as clearly shown in Figures 1 and 3. As shown at the lower portion of Figures 1 and 2, the bottom chord of the end side section consists of the angle bar 27 the vertical leg of which is secured to the plate 22 and the horizontal leg of which extends outwardly of the plate in prolongation of the horizontal leg of the angle bar 18. The angles 18 and 27 at their horizontal sections are connected by the plate 28.

It will be apparent that the end portions of the top and bottom chords are formed of sections uniform with the top and bottom chords of the intermediate car portion and no special shapes are required. By the use of proper connecting plates 26 and 28 the necessary strength is afforded. The inter-

mediate portion of the Z bar 19 is of a length which properly corresponds to the horizontal legs of the top and bottom chords and all of these dimensions are such as to afford adequate room for placing the ladder rungs 24. It will be apparent that the construction shown and described affords required ladder spaces with a minimum loss of carrying capacity. Further, the construction is simple in design requiring no special parts and is adapted for commercial production.

I claim:

1. In a car construction, car sides, top and bottom chords comprising angle members having vertically extending legs secured to the car sides and horizontally extending legs extending inwardly of the car, end side sections offset inwardly of the main car sides and top and bottom chords of said end side sections comprising angle members having vertically extending legs secured to the end side sections and horizontally extending legs extending outwardly of such sections.

2. In a car construction, car sides, top and bottom chords comprising angle members having vertically extending legs secured to the car sides and horizontally extending legs extending inwardly of the car, end side sections offset inwardly of the main car sides, top and bottom chords of said end side sections comprising angle members having vertically extending legs secured to the end side sections and horizontally extending legs extending outwardly of such sections, and vertically extending Z members connecting the intermediate car sides and the end side sections.

3. In a car construction, car sides, top and bottom chords comprising angle members having vertically extending legs secured to the car sides and horizontally extending legs extending inwardly of the car, end side sections offset inwardly of the main car sides, top and bottom chords of said end side sections comprising angle members having vertically extending legs secured to the end side sections and horizontally extending legs extending outwardly of such sections, and ladder members secured to the end side sections.

4. In a car construction, car sides, top and bottom chords comprising angle members having vertically extending legs secured to the car sides and horizontally extending legs extending inwardly of the car, end side sections offset inwardly of the main car sides and top and bottom chords of said end side sections comprising angle members having vertically extending legs secured to the end side sections and horizontally extending legs extending outwardly of such sections and connecting members securing together the contiguous ends of the intermediate and end sections of the chords.

5. In a car construction, intermediate car side sections, top chords for said section comprising bulb angles having one leg extending vertically and secured to the side sections, the bulb leg extending horizontally inward, a bottom chord comprising an angle having a vertically extending leg secured to the side, end side sections offset inwardly from the intermediate section by a distance substantially equal to the horizontal legs of the chord angles, chord angles for the end sections similar to those of the intermediate section having their horizontal legs extending outwardly of the end sections and in prolongation of the horizontal legs of the chords of the intermediate section, and means connecting the horizontal legs of the intermediate and end chords.

6. In a car construction, intermediate car side sections, top chords for said section comprising bulb angles having one leg extending vertically and secured to the side sections, the bulb leg extending horizontally inward, a bottom chord comprising an angle having a vertically extending leg secured to the side, end side sections offset inwardly from the intermediate section by a distance substantially equal to the horizontal legs of the chord angles, chord angles for the end sections similar to those of the intermediate section having their horizontal legs extending outwardly of the end sections and in prolongation of the horizontal legs of the chords of the intermediate section, means connecting the horizontal legs of the intermediate and end chords, and vertically extending Z members connecting the intermediate and end side sections.

7. In a car construction, intermediate car side sections, top chords for said section comprising bulb angles having one leg extending vertically and secured to the side section, the bulb leg extending horizontally inward, a bottom chord comprising an angle having a vertically extending leg secured to the side, end side sections offset inwardly from the intermediate section by a distance substantially equal to the horizontal legs of the chord angles, chord angles for the end sections similar to those of the intermediate section having their horizontal legs extending outwardly of the end sections and in prolongation of the horizontal legs of the chords of the intermediate section, means connecting the horizontal legs of the intermediate and end chords, vertically extending Z members connecting the intermediate and end side sections, and ladder rungs secured to the end side sections.

8. In a car construction, car sides having a main section and end sections, said end sections being offset inwardly of the main section, top and bottom chords for said sides, the top chords comprising angle members having flanges extending inwardly of the

car on the main section and outwardly of the car on the end sections.

9. In a car construction, car sides, top and bottom chords comprising angle members
5 having vertically extending legs secured to the car sides and horizontally extending legs extending inwardly of the car, end side sections offset inwardly of the main car sides and top chords of said end side sections comprising
10 angle members having vertically extending legs secured to the end side sections and horizontally extending legs extending outwardly of such sections.

10. In a car construction, car sides, top
15 chords comprising angle members having

vertically extending legs secured to the car sides and horizontally extending legs extending inwardly of the car, end side sections offset inwardly of the main car sides and top chords of said end side sections comprising
20 angle members having vertically extending legs secured to the end side sections and horizontally extending legs extending outwardly of such sections and connecting members securing together the contiguous ends
25 of the intermediate and end sections of the chords.

Signed at Chicago, Illinois, this 2nd day of June, 1924.

DAVID HINDAHL.