

No. 842,873.

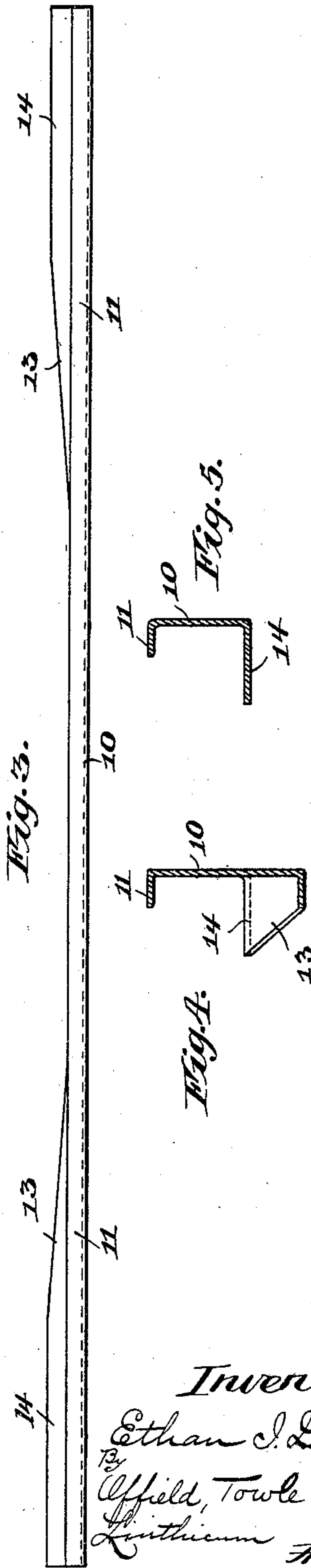
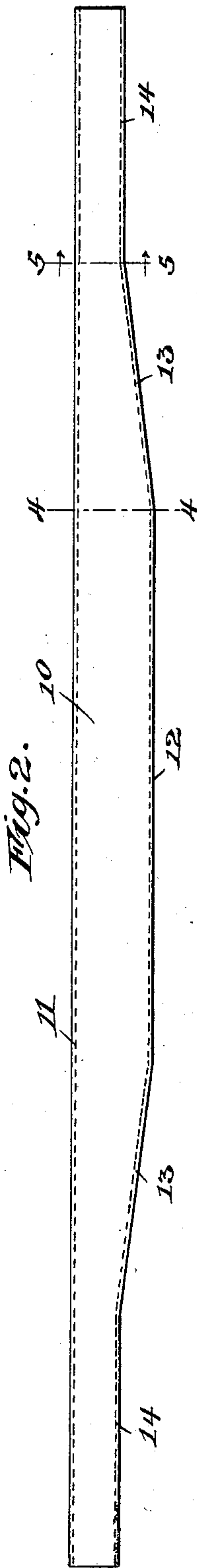
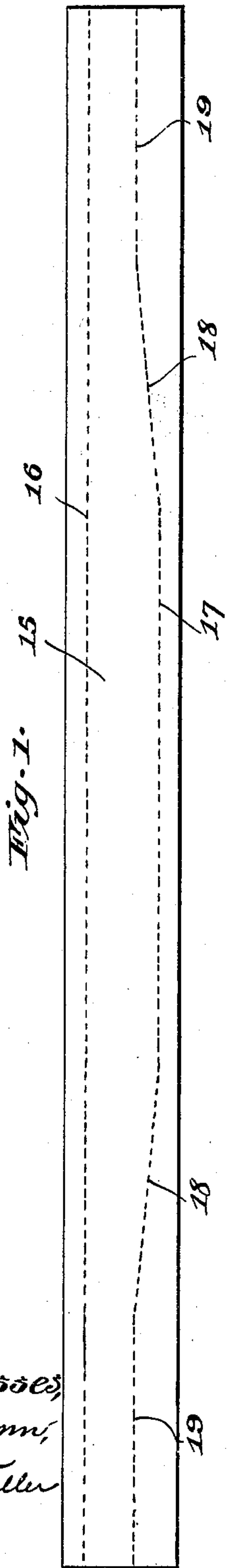
PATENTED FEB. 5, 1907.

E. I. DODDS.

METALLIC UNDERFRAME FOR CARS.

APPLICATION FILED OCT. 30, 1905.

3 SHEETS—SHEET 1.



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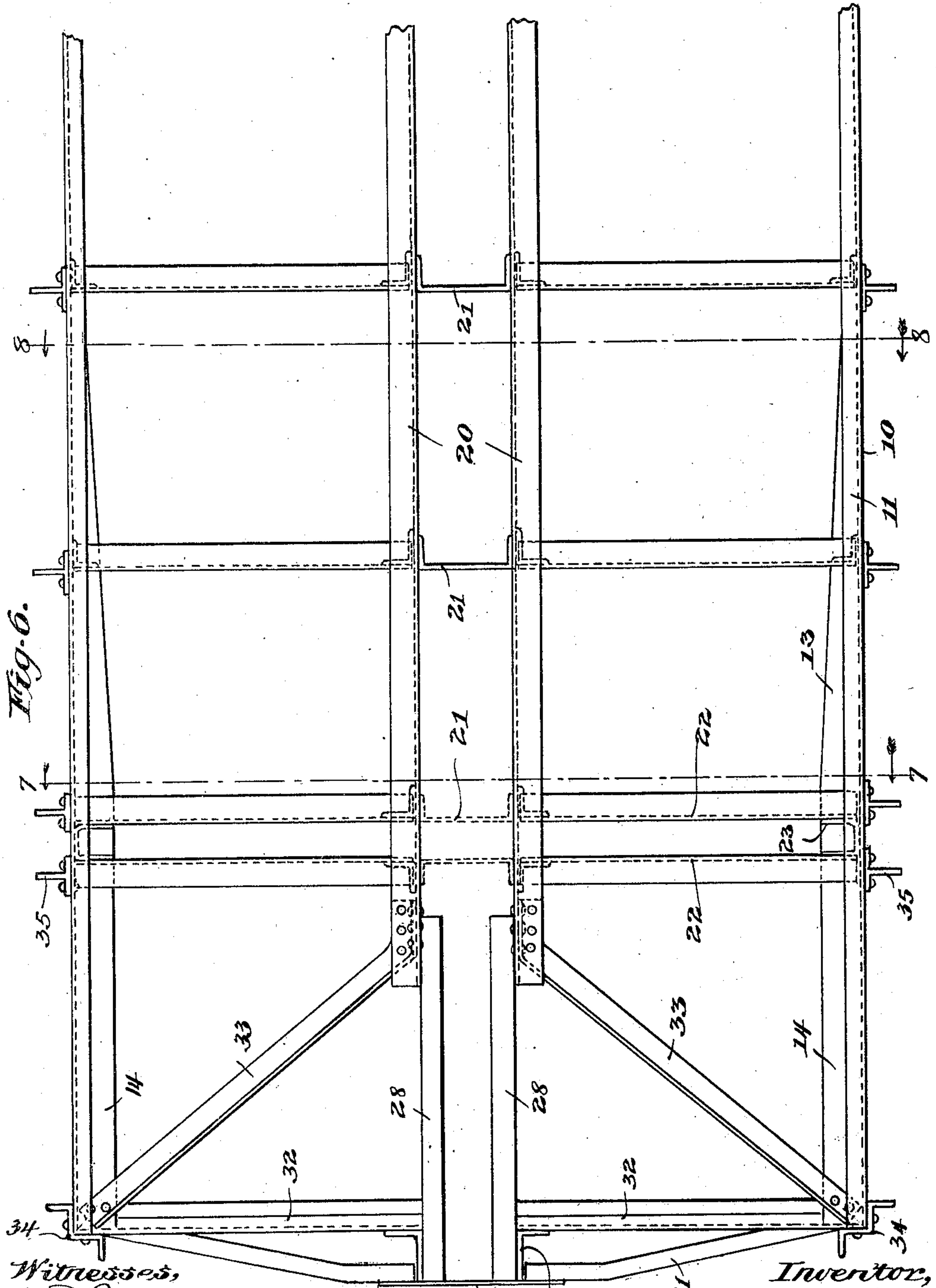
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3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

Fig. 7.

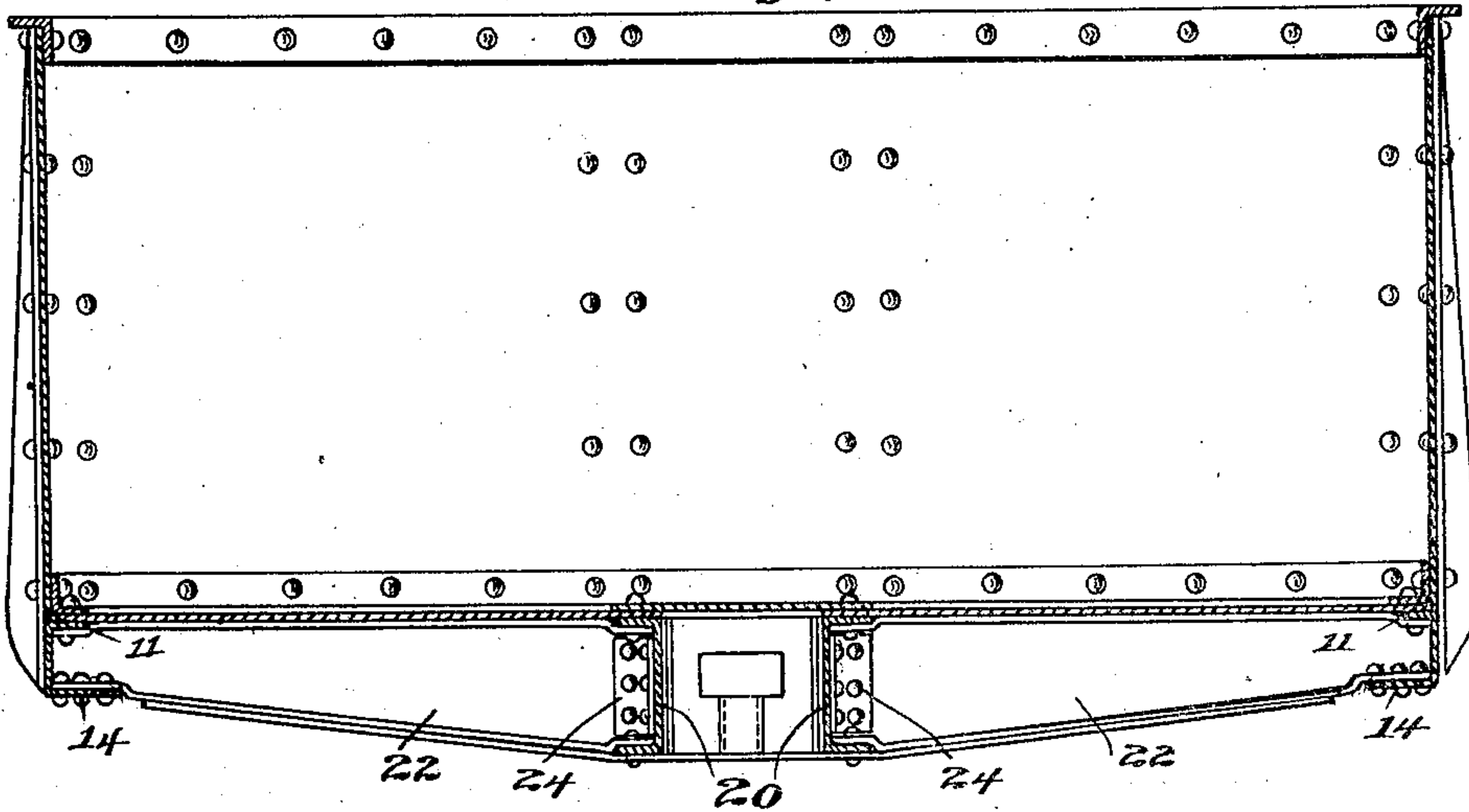
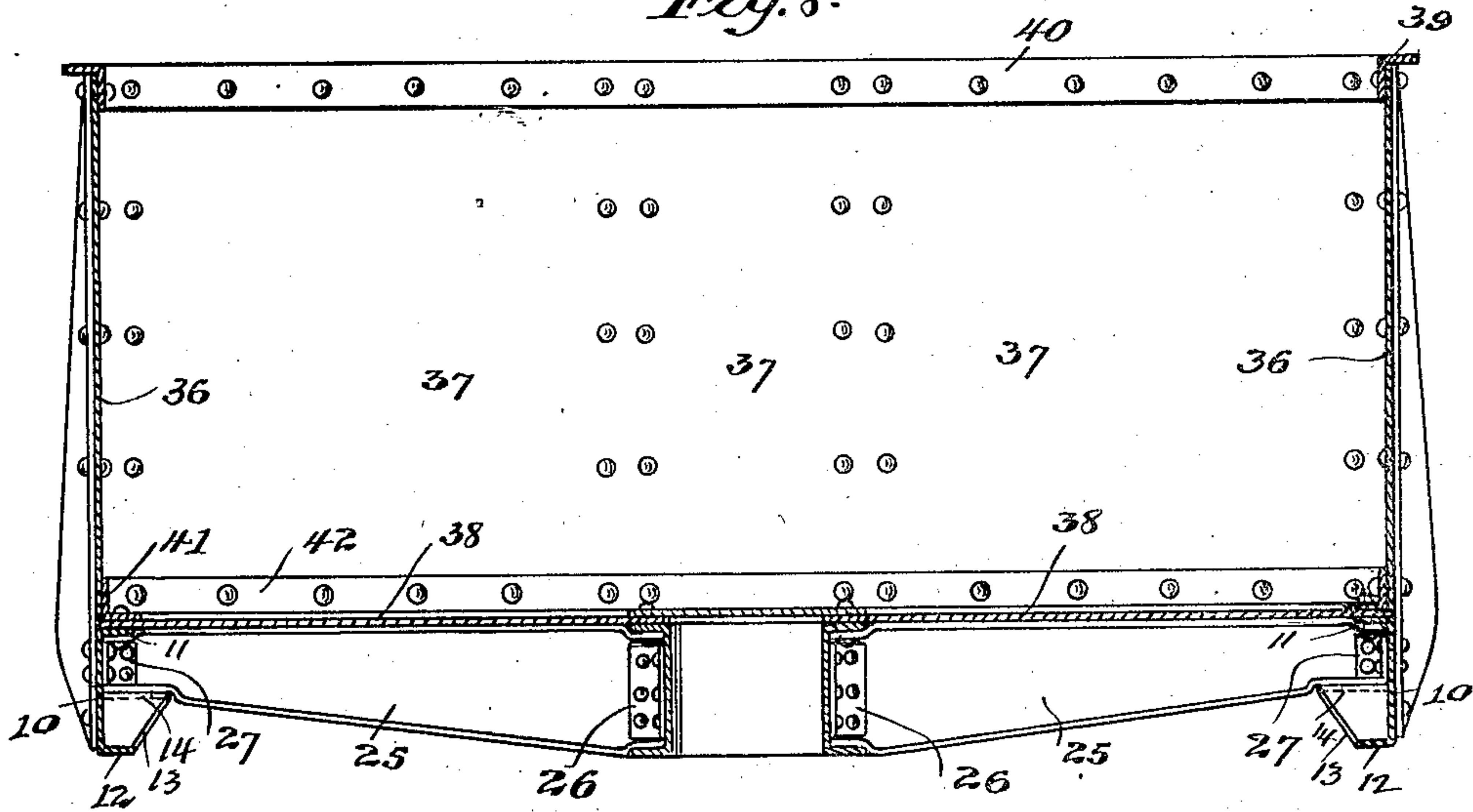


Fig. 8.



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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.

METALLIC UNDERFRAME FOR CARS.

No. 842,873.

Specification of Letters Patent.

Patented Feb. 5, 1907.

Application filed October 30, 1905. Serial No. 285,153.

To all whom it may concern.

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

In a car embodying my invention the side sills have each a bottom flange with wide ends and intermediate tapered portions. Such a flange affords convenient means for the attachment of the outer ends of the body-bolsters or other transverse beams and of the diagonal braces without employing angle or gusset plates. The ends of the bolsters and diagonals rest upon and are riveted to the broad ends of the bottom flanges, whereby a strong structure results. It will also be found desirable and advantageous to rivet the top flanges of the sills and bolsters or transoms together, and in the structure described these flanges are integral with the sills and transverse beams.

In the accompanying drawings I have illustrated my invention, like reference characters on all the figures referring to the same parts.

Figure 1 is a face view of the blank from which one of the side sills may be manufactured. Fig. 2 is a face view of the completed sill. Fig. 3 is a plan or upper edge view of the sill shown in Fig. 2. Fig. 4 is a vertical section on the line 4 4 of Fig. 2. Fig. 5 is a vertical section on the line 5 5 of Fig. 2. Fig. 6 is a plan view of a part of the car-underframe. Fig. 7 is a vertical cross-section of the car on line 7 7 of Fig. 6, and Fig. 8 is a similar view on line 8 8 of Fig. 6.

Each side sill 10 has a uniform integral top flange 11 extending substantially the full length of the sill, which is provided on its lower edge with an integral flange including the central uniform portion 12, the tapered intermediate portions 13, and the wide end portions 14. A sill of this character may be economically and readily manufactured from a rectangular sheet-metal blank, as shown in Fig. 1, the longitudinal edges of which may be bent over on the straight line 16 and the bent line 17 18 19 to form the flanges. Besides these side sills the underframe includes spaced channel center sills 20, tied together at intervals by short channel-sections 21.

The body-bolsters comprise a plurality of tapered channel-beams 22, spaced apart at their outer ends by members 23, the inner ends of the beams being fastened to the center sills by angle-plates 24; the outer ends of the beams resting upon and riveted to the broad flanges 14 of the side sills, the ends of the upper flanges being riveted to the top flanges 11 of the sills. Flying transoms 25 are provided, the same being fastened to the center sills and side sills by means of angle-plates 26 and 27, respectively. Draft-sills 28 are secured to the outer ends of center sills 20 and to the face-plate 29 and end stakes 30, the face-plate being also connected to the corners of the car by bars 31. These corners are tied to the draft-sills by means of transverse bars 32 and to the center sills by diagonal angle-braces 33, the outer ends of which rest upon and are riveted to the wide flanges 14 of the side sills. Corner and side stakes 34 and 35, respectively, also form a part of the structure, as is usual. The car-body comprises side plates 36, end plates 37, and floor-plates 38, together with the coping-angles 39 and 40 and the angles 41 and 42, which extend longitudinally and transversely of the car, respectively, the angle-bars 39 and 40 being secured, by means of rivets, to the side plates and side stakes and the bars 41 and 42 to the floor-plates and top flanges of the side sills and transverse beams.

It will be apparent that this construction does away with the employment of angle and gusset plates for the transverse and diagonal beams without sacrificing strength. The side sills and their method of manufacture form the subject-matter of a copending application, Serial No. 285,152, filed October 30, 1905.

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

I claim—

1. In a railway-car, the combination of a bellied side sill having a bottom flange along its lower margin, said flange having a central portion of uniform width, tapered intermediate portions, and wide ends, and transverse beams resting on and secured to said wide ends, substantially as described.

2. In a railway-car, the combination of a bellied side sill having a bottom flange along its lower margin, said flange having a central

portion of uniform width, tapered intermediate portions, and wide ends, the parts of said sill being so proportioned that the sum of the depth of the sill and the width of said
5 flange is the same at all points of its length, and transverse beams resting on and secured to said wide ends of the flange, substantially as described.

3. In a railway-car, the combination of a
10 side sill having a top flange and a bottom flange, said bottom flange having ends wider than its central portion, and a transverse beam having top and bottom flanges, said top flanges being secured together, the bot-
15 tom flange of said transverse beam being secured to one of the wide ends of said sill, substantially as described.

4. In a railway-car, the combination of a bellied side sill having an integral top flange

and an integral bottom flange, said bottom 20 flange having wide ends and intermediate tapered portions, and a transverse beam having integral top and bottom flanges, said top flanges being riveted together and the bottom flange of said transverse beam being riv- 25 eted to one of the wide ends of the bottom flange of said sill, substantially as described.

5. In a railway-car, the combination of a bellied side sill having a bottom flange along its lower margin, said flange having a central 30 part of uniform width, tapered intermediate portions, and wide ends, and diagonal braces resting upon and riveted to the wide ends of said flange, substantially as described.

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