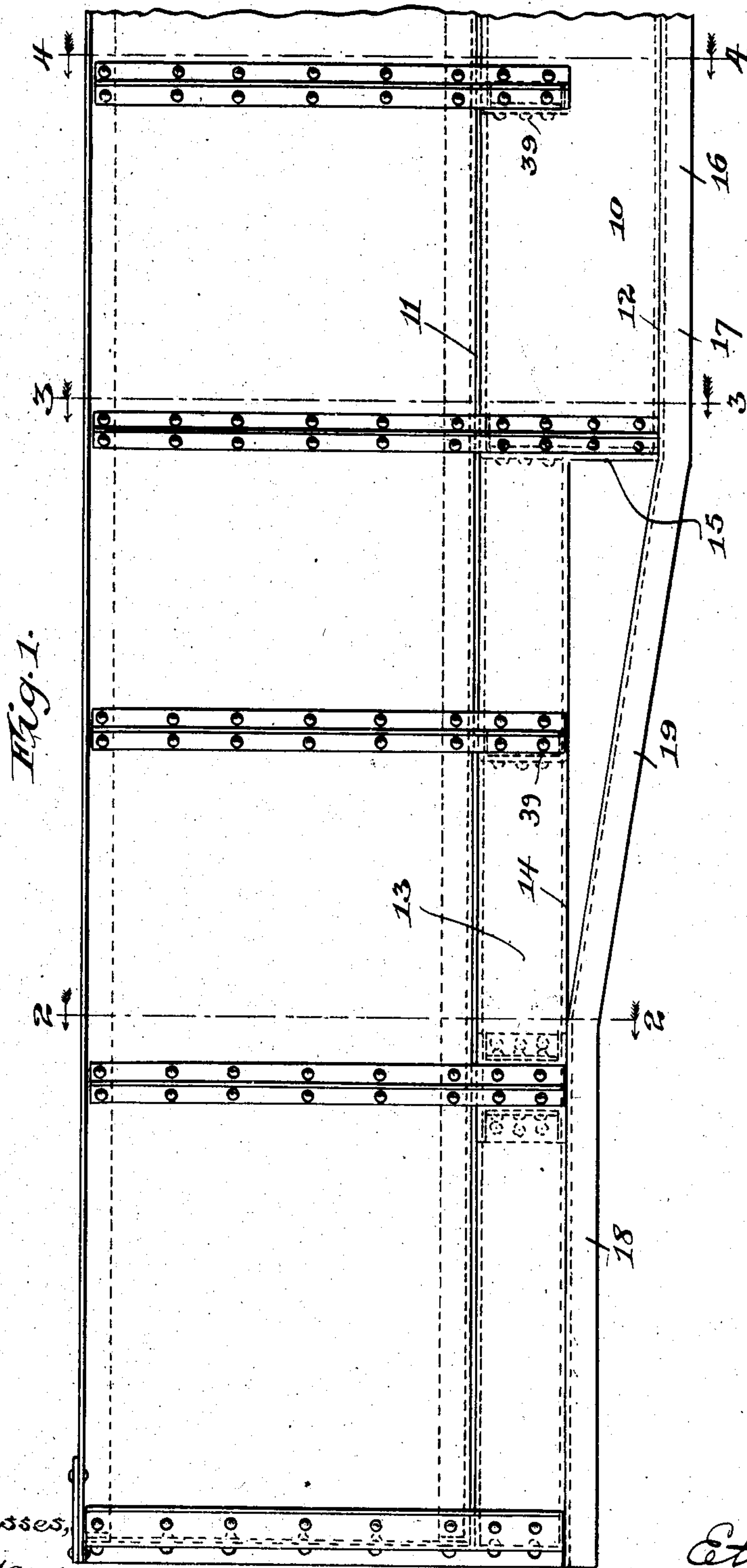


No. 834,005.

PATENTED OCT. 23, 1906.

E. I. DODDS.
METALLIC CAR UNDERFRAME.
APPLICATION FILED OCT. 30, 1905.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

Fig. 2.

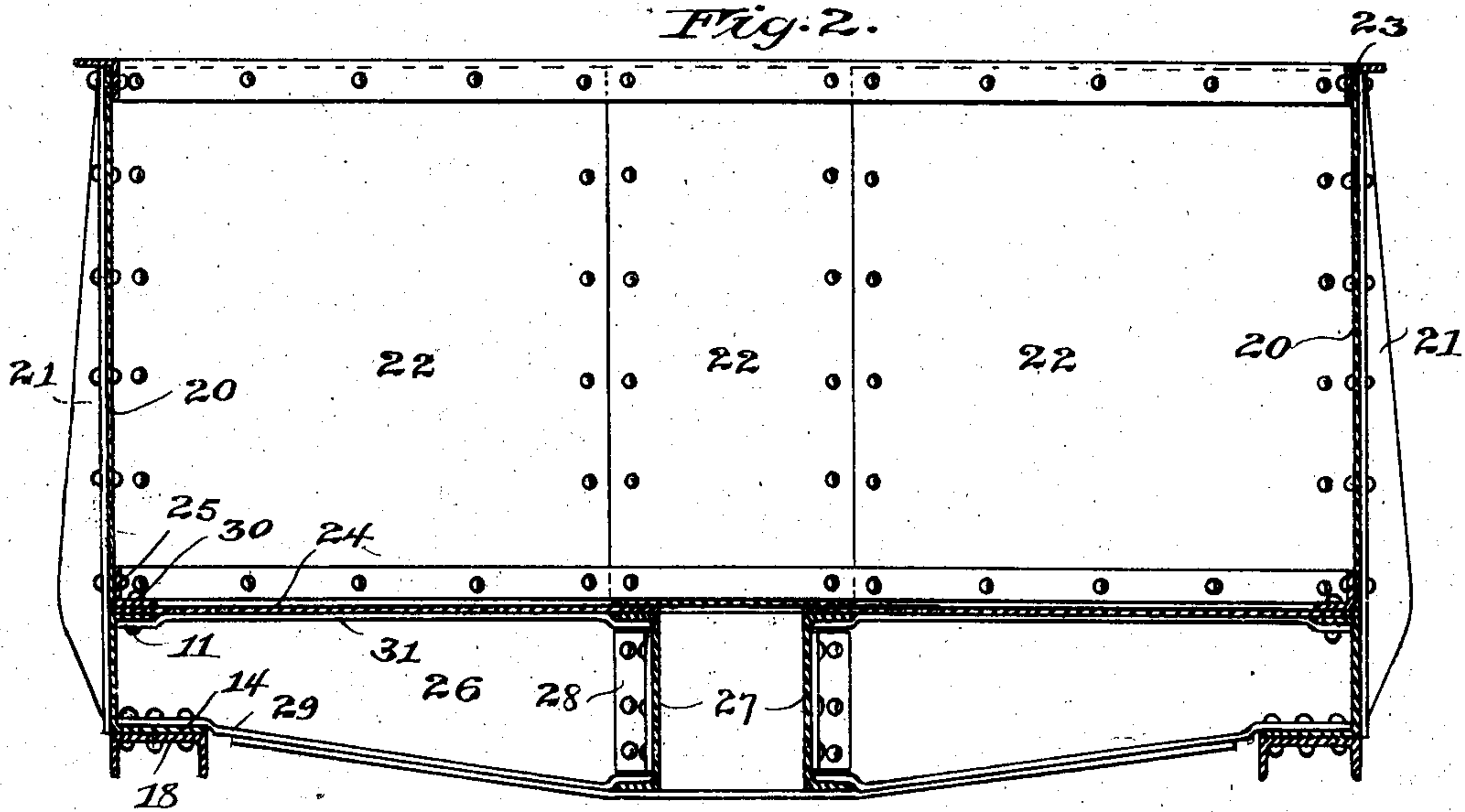


Fig. 3.

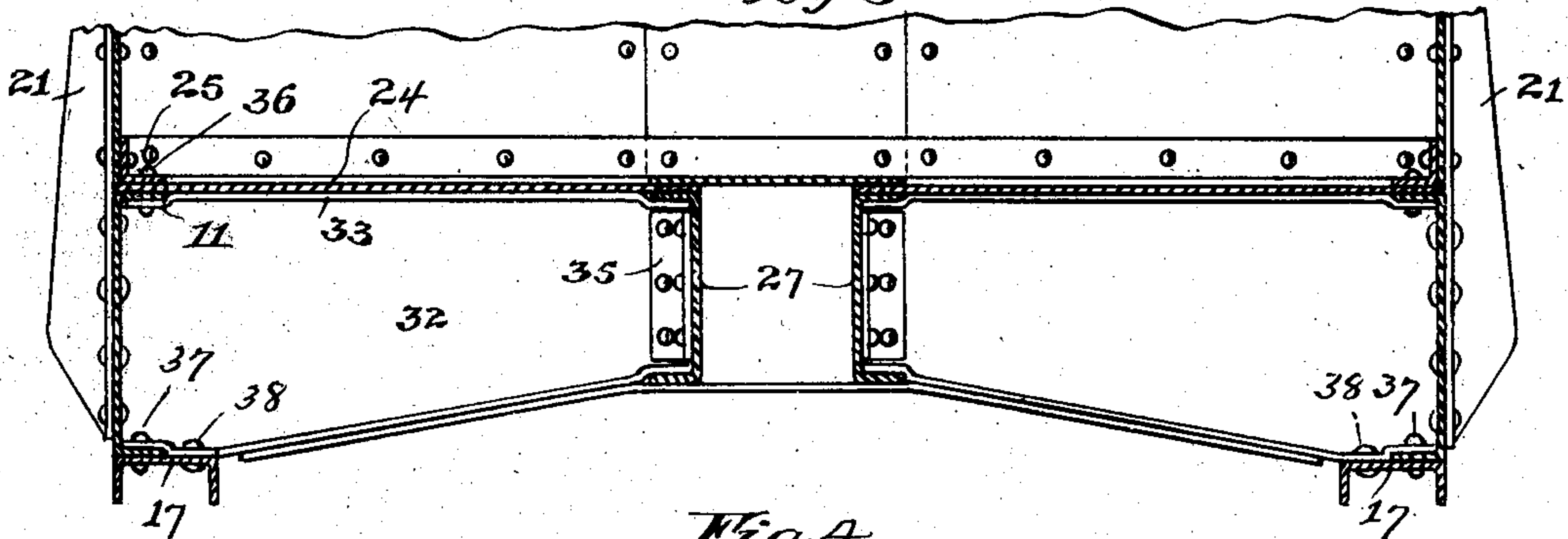
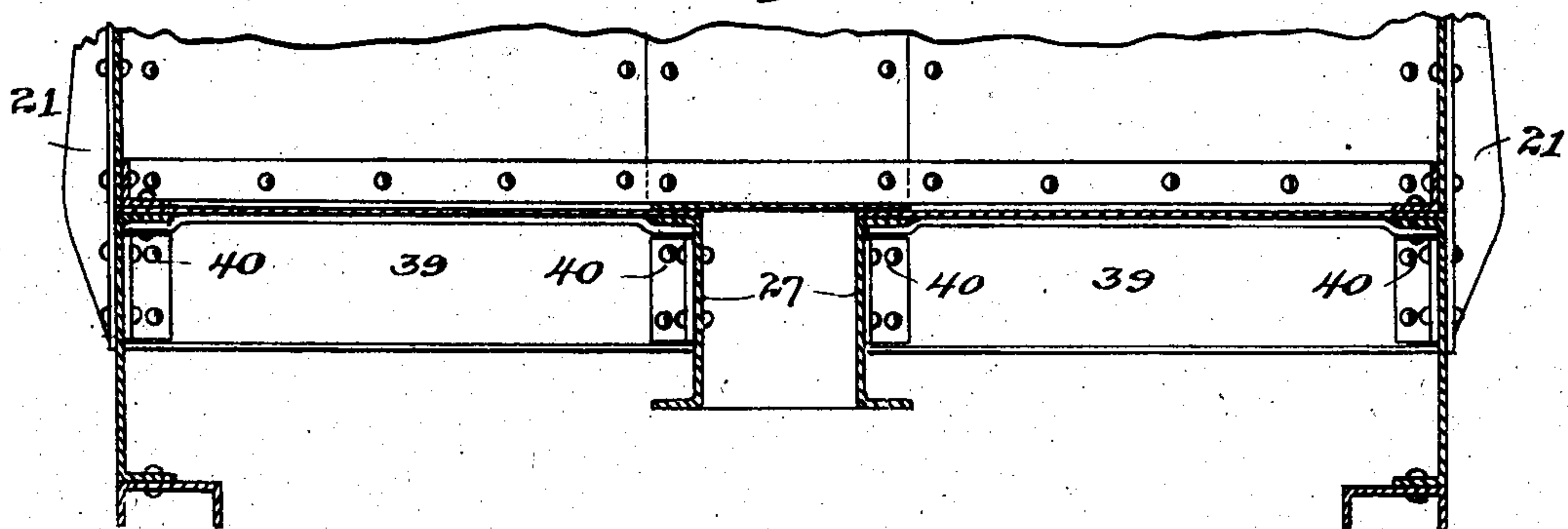


Fig. 4.



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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 CAR-UNDERFRAME.

No. 834,005.

Specification of Letters Patent.

Patented Oct. 23, 1906.

Application filed October 30, 1905. Serial No. 285,154.

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 Car-Underframes, of which the following is a specification.

For the side sill of a car I employ in accordance with my present invention a rectangular metal sheet which has had a flange turned over along its top edge and a comparatively narrow flange folded over along the lower edge of its central part and which has been sheared upwardly from its bottom edge, permitting wide flanges to be bent over on the lower edges of the end portions, the latter being of less depth than the central part, the extra metal, due to the decreased depth, being taken up in their broad flanges. The lower flanges of the central and end parts are then tied together by a tension-bar riveted thereto, the body-bolsters resting upon and fastened to the broad flanges of the terminal portions, dispensing with the usual angle-plates, and the needle-beams resting upon the bar and the lower flange of the central part of the sill and fastened thereto. Such a construction is of comparatively light weight, economical in the cost of manufacture, and affords convenient attaching means for the ends of the body-bolsters and needle-beams.

In the accompanying drawings I have illustrated the preferred mechanical embodiment of my invention, like reference characters in all the figures referring to the same parts.

Figure 1 is a side elevation of a portion of a car embodying my invention. Fig. 2 is a vertical cross-section thereof adjacent to the body-bolster on line 2 2 of Fig. 1 as viewed in the direction indicated by the arrows. Fig. 3 is a fragmentary vertical cross-section of the car near the needle-beam on line 3 3 of Fig. 1, and Fig. 4 is a fragmentary vertical cross-section on line 4 4 of Fig. 1.

The metallic side sill 10 has an integral inwardly-turned top flange 11, extending substantially the full length of the sill, the rectangular central portion of the sill having an inwardly-turned integral lower flange 12, the rectangular end portions 13 of the sill each being of less depth than central part 10 and having a broader inturned integral lower

flange 14. For the sake of economy in manufacture a sill of this character is preferably made from a rectangular sheet of metal by turning over the top flange 11, shearing the sheet along the parallel vertical lines 15, (of which only one is shown,) folding over the bottom flange 12 on the lower edge of the central portion, and then bending over the wide lower flanges 14 on the bottom edges of the end parts. A channel tension-bar 16, which has its flanges extended downwardly and only half of which is shown in Fig. 1, has central and end horizontal portions 17 and 18, respectively, and intermediate inclined portions 19, the webs of the horizontal portions being connected by means of rivets to the lower flanges of the end and central portions of the sill, leaving open spaces between inclined portions 19 and flanges 14.

The car-body includes side plates 20, side stakes 21, end plates 22, coping angle-bars 23, floor-plates 24, and the inside angle-bars 25, which extend lengthwise above the side sills and also across the ends of the car, the outer edges of floor-plates 24 being disposed between the angle-bars 25 and the top flanges 11 of the side sills.

Channel body-bolster beams 26 are secured to the twin spaced channel center sills 27 by means of angle-plates 28, the outer ends of their integral lower flanges 29 resting upon the wide flanges 14 of the side sills, being riveted thereto and to the web of the tension-bar 18, rivets 30 fastening together angle-bars 25, floor-plates 24, flanges 11, and top flanges 31 of the bolster-beams. Needle-beams 32, with their integral top and bottom flanges 33 and 34, respectively, are similarly secured to the center sills by means of angle-plates 35, rivets 36 fastening together angle-bars 25, floor-plates 24, and flanges 11 and 33, the lower flange 34 resting upon flange 12 and the web of tension-bar 17, rivets 37 securing together flanges 34 and 12 and the web of the bar and rivets 38 securing together flange 34 and the web of the bar. Attention is directed to the fact that the needle-beams 32 are secured both to the center sills and to the side sills, tapering from the latter to the former, as shown in Fig. 3. Cross-bearers 39 are fastened to the center and side sills by means of the usual angle-plates 40, as shown most clearly in Fig. 4.

My improved construction embodies side sills which are light in weight, but which nevertheless possess great strength, besides affording broad supporting means for the outer ends of the body-bolsters and needle-beams. It will be apparent that the channel tension-bar securely ties together the central and end parts of the sill; but obviously any form of bar may be employed for this purpose.

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

I claim—

1. A metallic sill for a railway-car having adjoining rectangular central and end parts, said central part being of greater depth than said end parts, and a bar secured to the lower portions of said central and end parts, substantially as described.

2. A metallic sill for a railway-car having adjoining integral rectangular central and end parts, said central part being of greater depth than said end parts, and a bar secured to the lower portions of said central and end parts, substantially as described.

3. A metallic sill for a railway-car having adjoining integral rectangular central and end parts with flanges on their lower edges, said central part being of greater depth than said end parts, and a bar secured to the flanges of said central and end parts, substantially as described.

4. A metallic sill for a railway-car having integral rectangular central and end parts, said central part having a flange along its lower edge and said end parts having wider flanges along their lower edges, and a bar secured to the flanges of said central and end parts, substantially as described.

5. A metallic sill for a railway-car having integral rectangular central and end parts, said central part being of greater depth than said end parts, said central part having a flange along its lower edge, and said end parts having flanges along their lower edges, the width of said latter flanges equaling the difference in depth between said central and

end parts plus the width of the flange on said central part, substantially as described.

6. A metallic sill for a railway-car having integral rectangular central and end parts, said central part being of greater depth than said end parts, said central part having a flange along its lower edge and each end part having a flange along its lower edge of a width equaling the difference in depth between said central and end parts plus the width of the flange on said central part, and a channel-bar whose web is riveted to the flanges of said end and central parts, substantially as described.

7. In a railway-car, the combination of a side sill having a bottom flange along its central part, a bar wider than said flange riveted thereto, a needle-beam having a bottom flange, rivets securing together the flange of said needle-beam, the flange of said sill and said bar, and additional rivets securing together the flange of said needle-beam and said bar, substantially as described.

8. In a railway-car, the combination of a side sill having a bottom flange along the central portion thereof, a channel-bar, the web of said channel-bar being wider than said flange and disposed beneath the same, a needle-beam having a bottom flange, rivets fastening together the flanges of said needle-beam and sill and the web of said bar, and additional rivets fastening together the flange of said needle-beam and the web of said bar, substantially as described.

9. In a railway-car, the combination of center sills, side sills, and needle-beams fastened to said center sills and side sills, said needle-beams being of greater depth at their outer ends than at their inner ends, substantially as described.

Signed by me at Chicago, Illinois, this 27th day of October, 1905, in the presence of two witnesses.

ETHAN I. DODDS.

Witnesses:

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