No. 889,588. PATENTED JUNE 2, 1908.

E. I. DODDS.

CAR.

APPLICATION FILED JUNE 7, 1907.

5 SHEETS—SHEET 1.

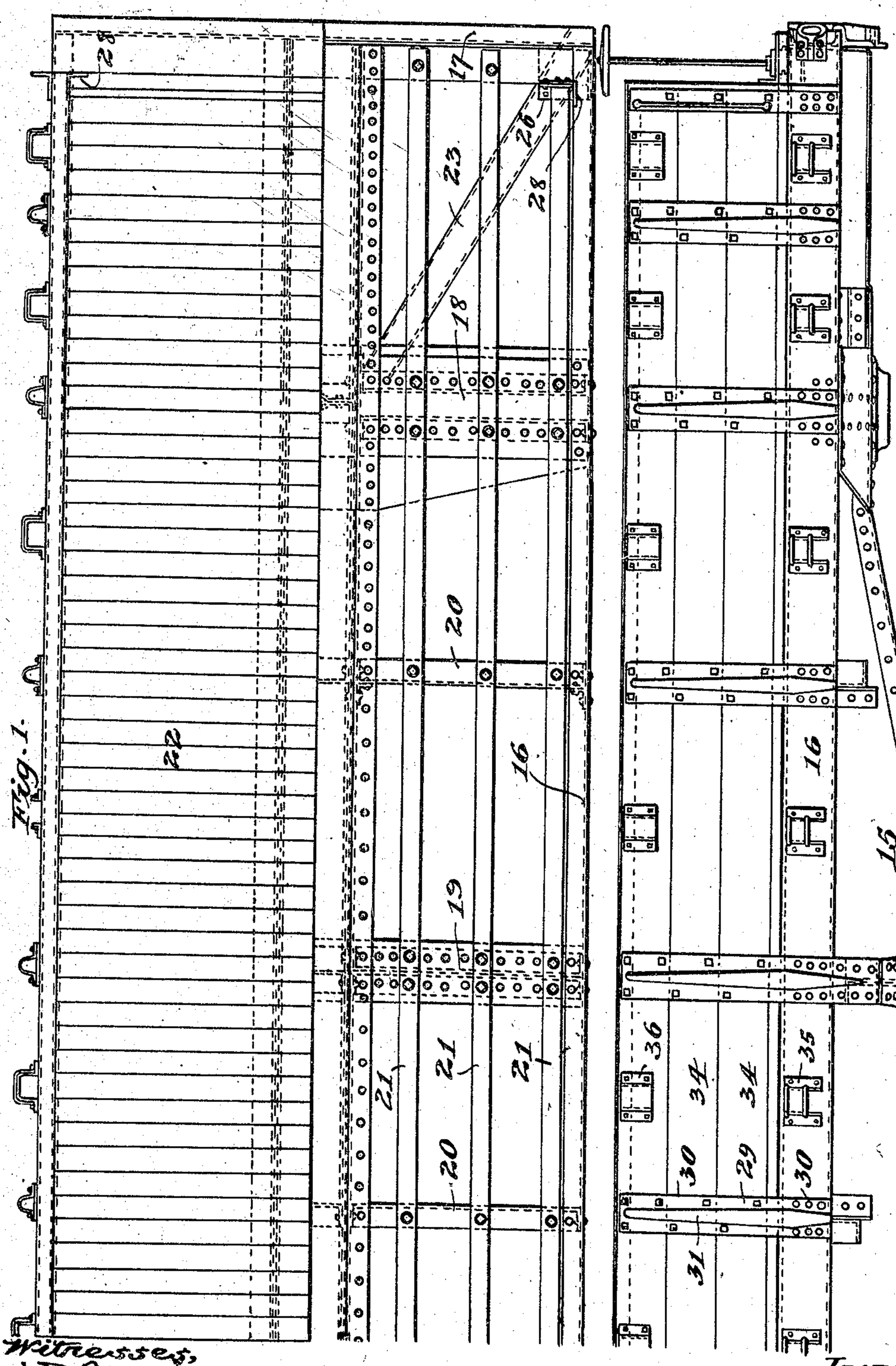

Fig. 1.

Fig. 2.

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5 SHEETS—SHEET 2.

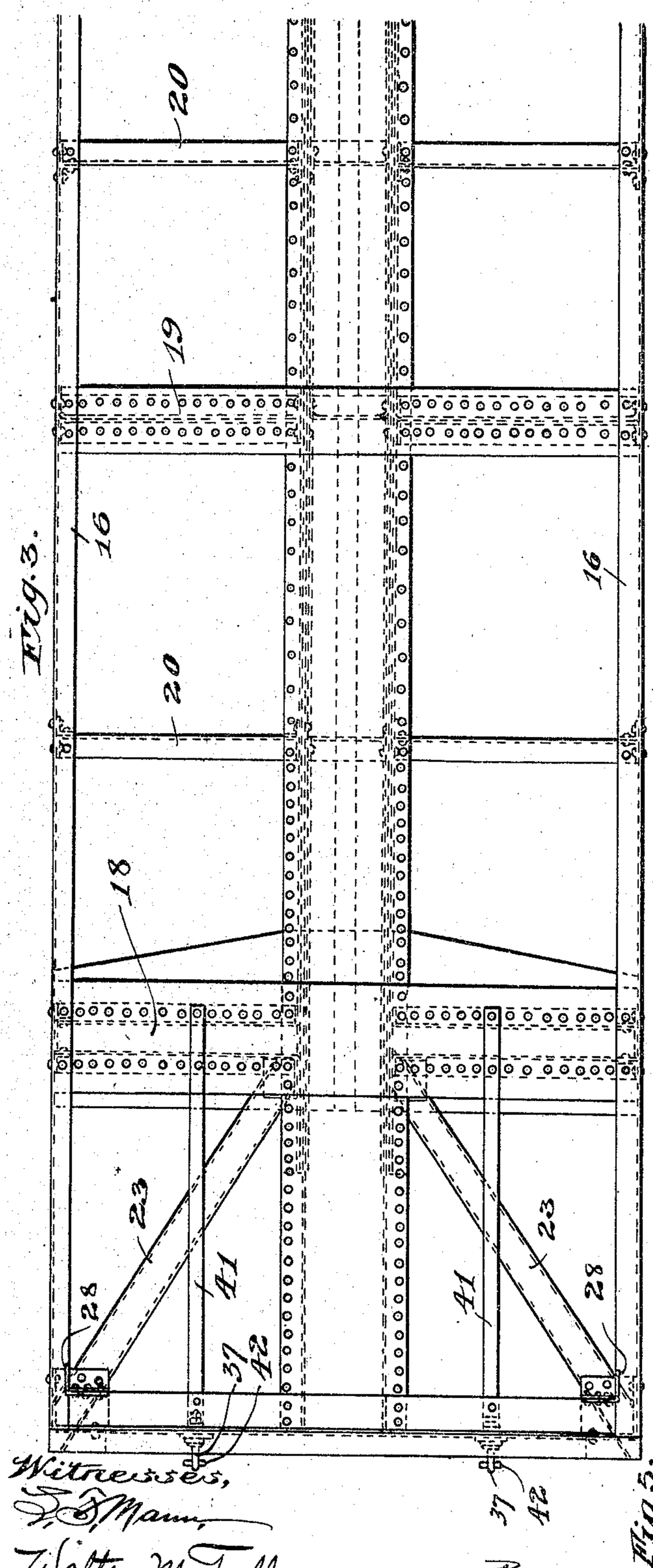

Fig. 3.

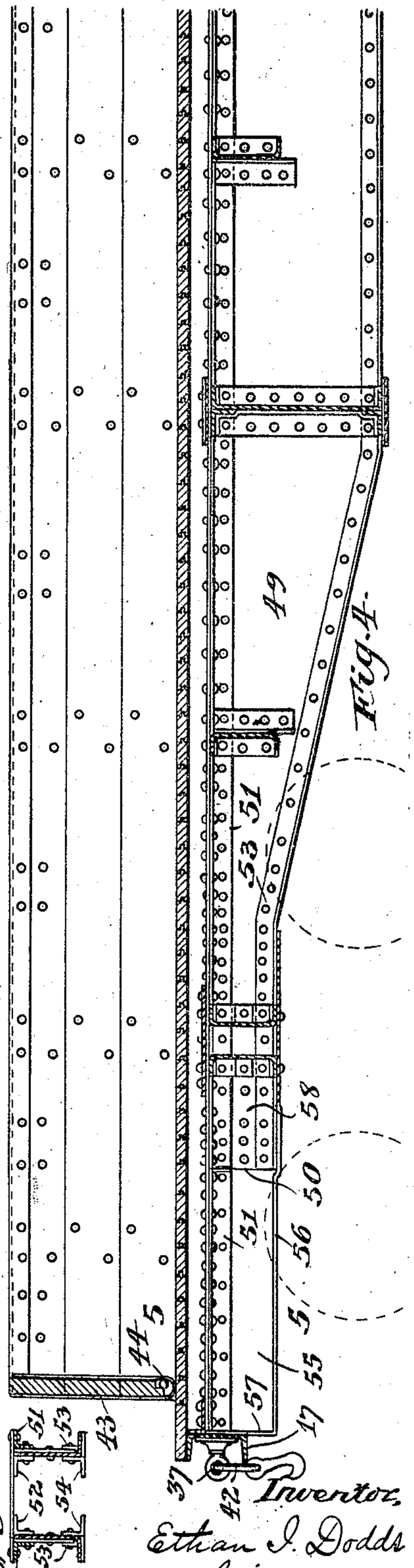

Fig. 4.

Fig. 5.

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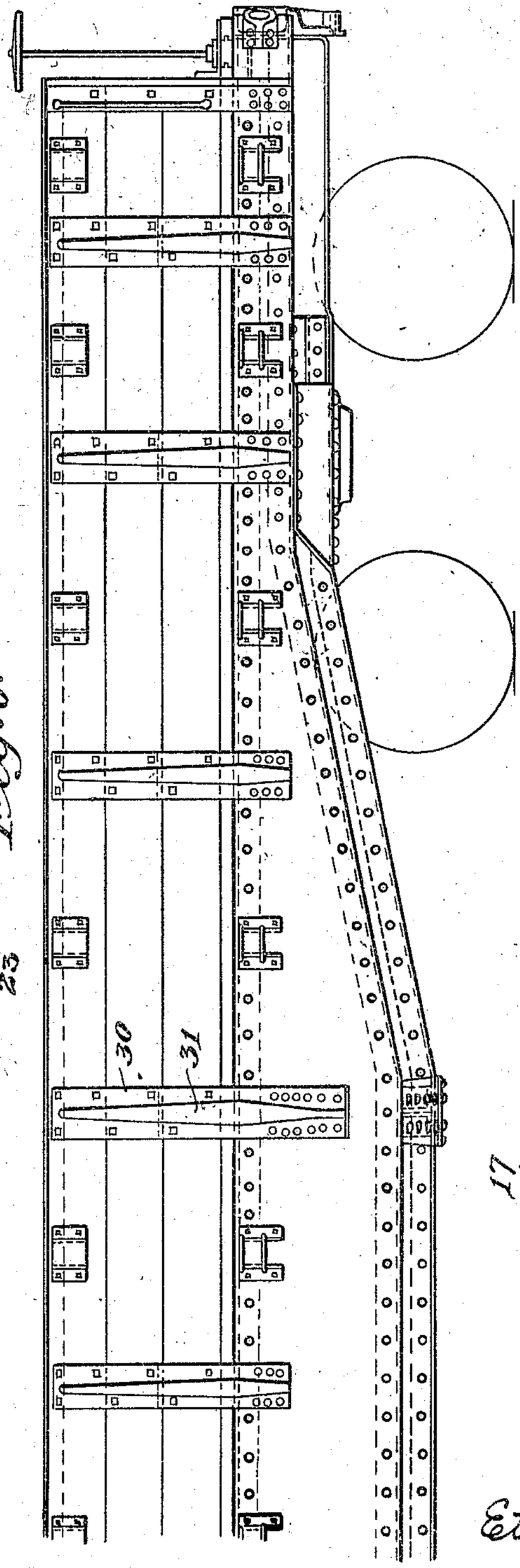

Fig. 6.

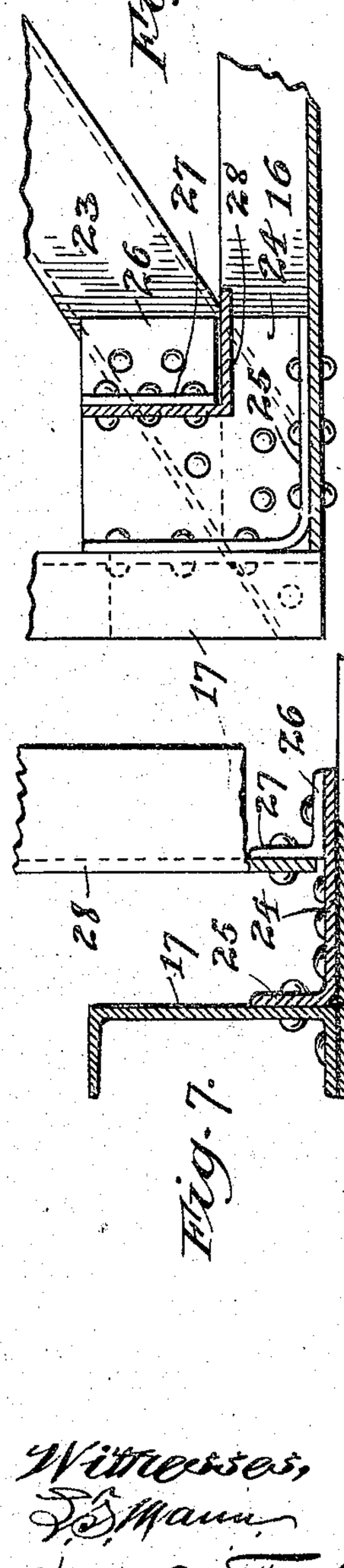

Fig. 8.

Fig. 7.

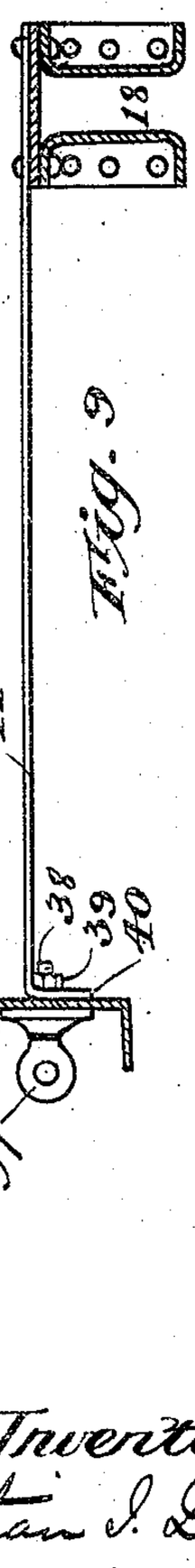

Fig. 9.

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5 SHEETS—SHEET 4.

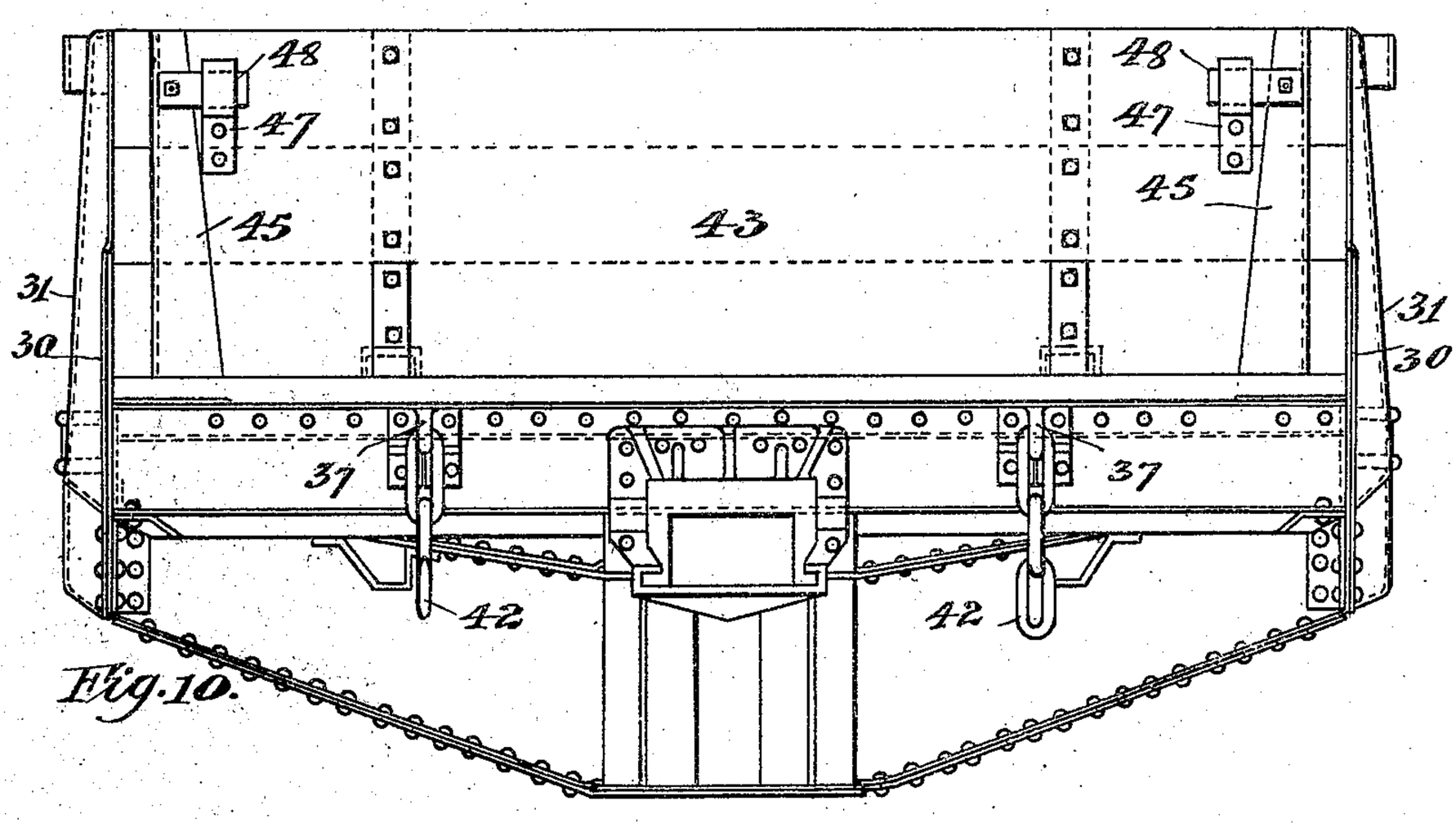

Fig. 10.

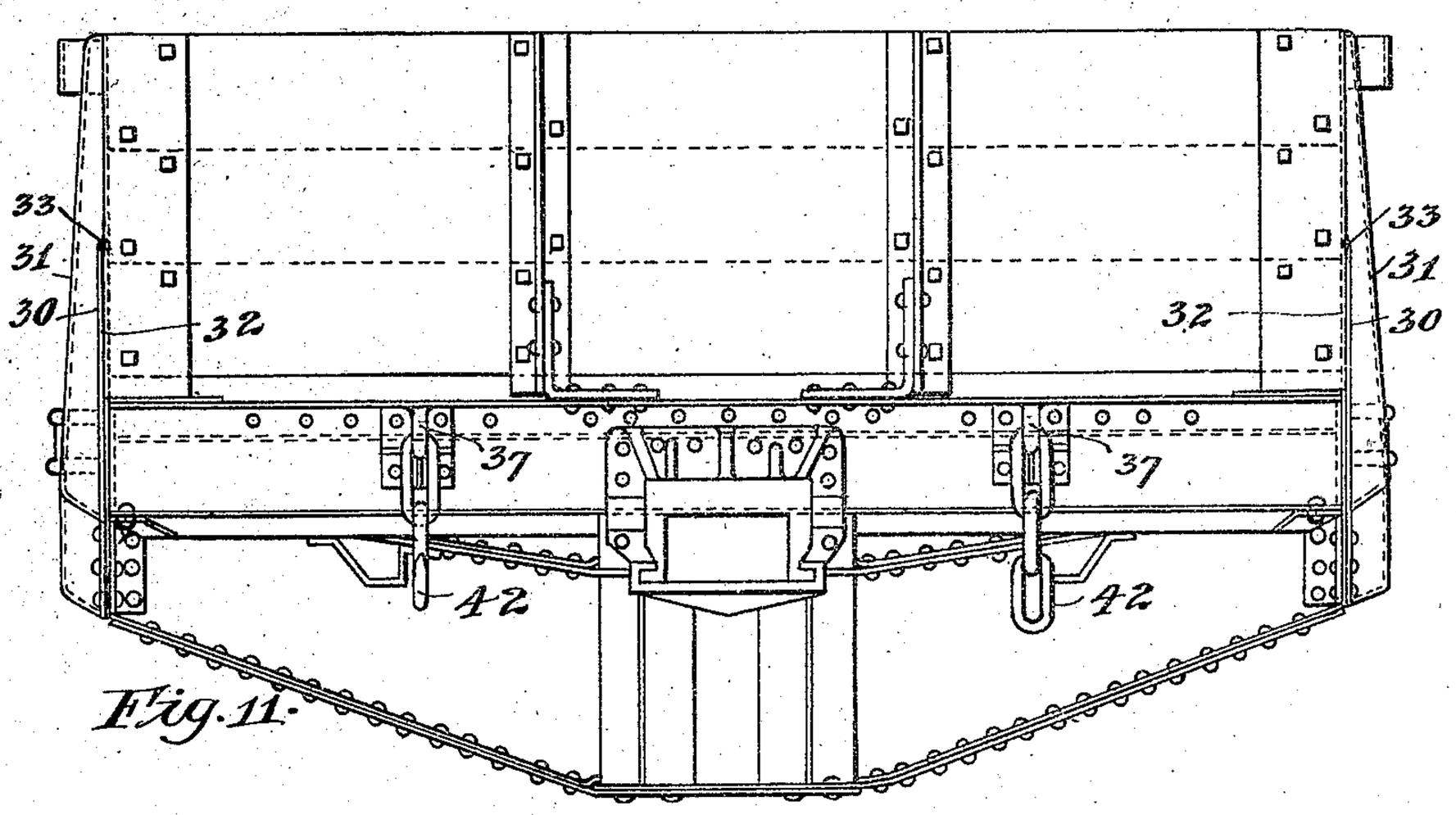

Fig. 11.

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5 SHEETS—SHEET 5.

Fig. 12.

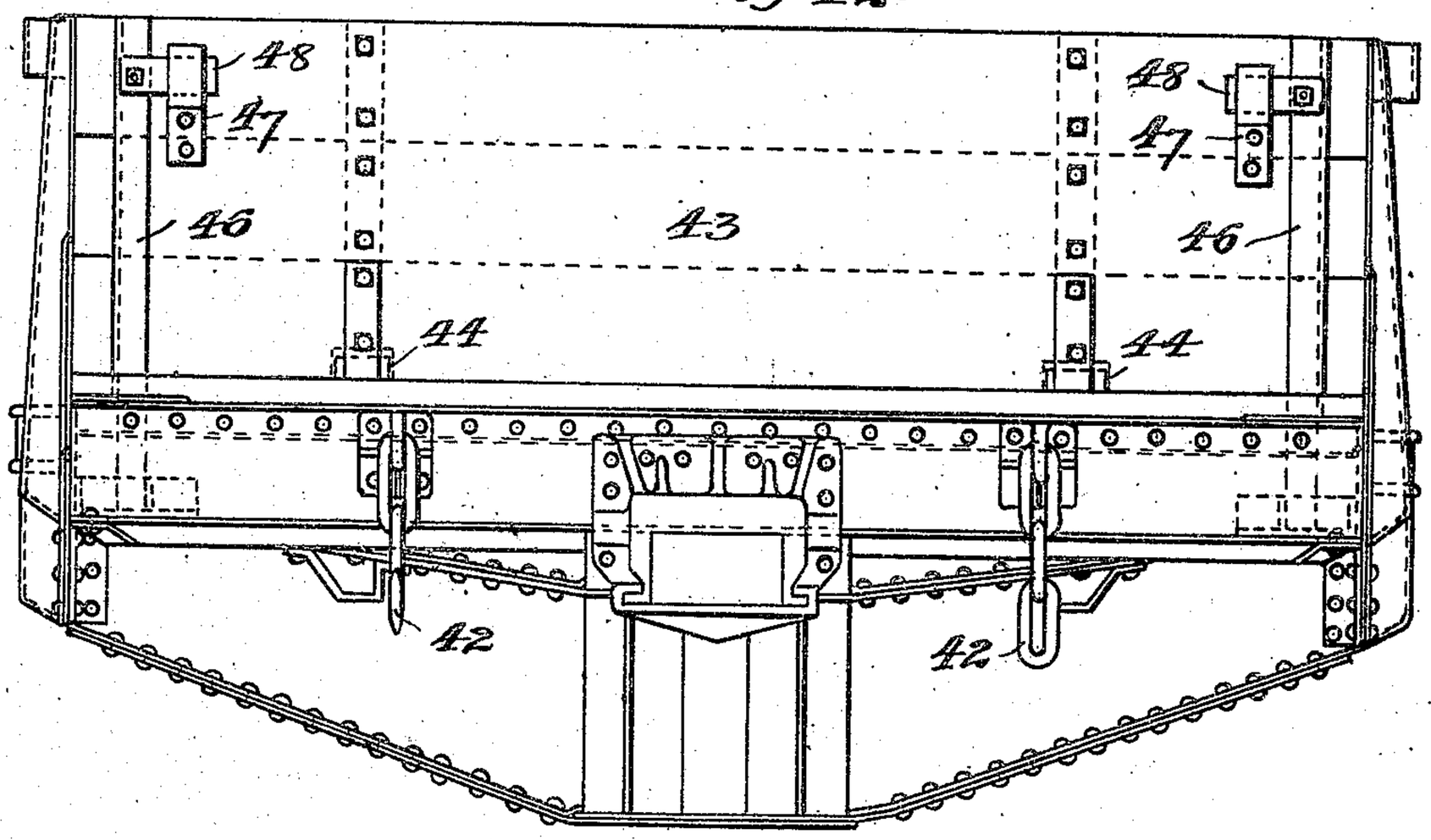
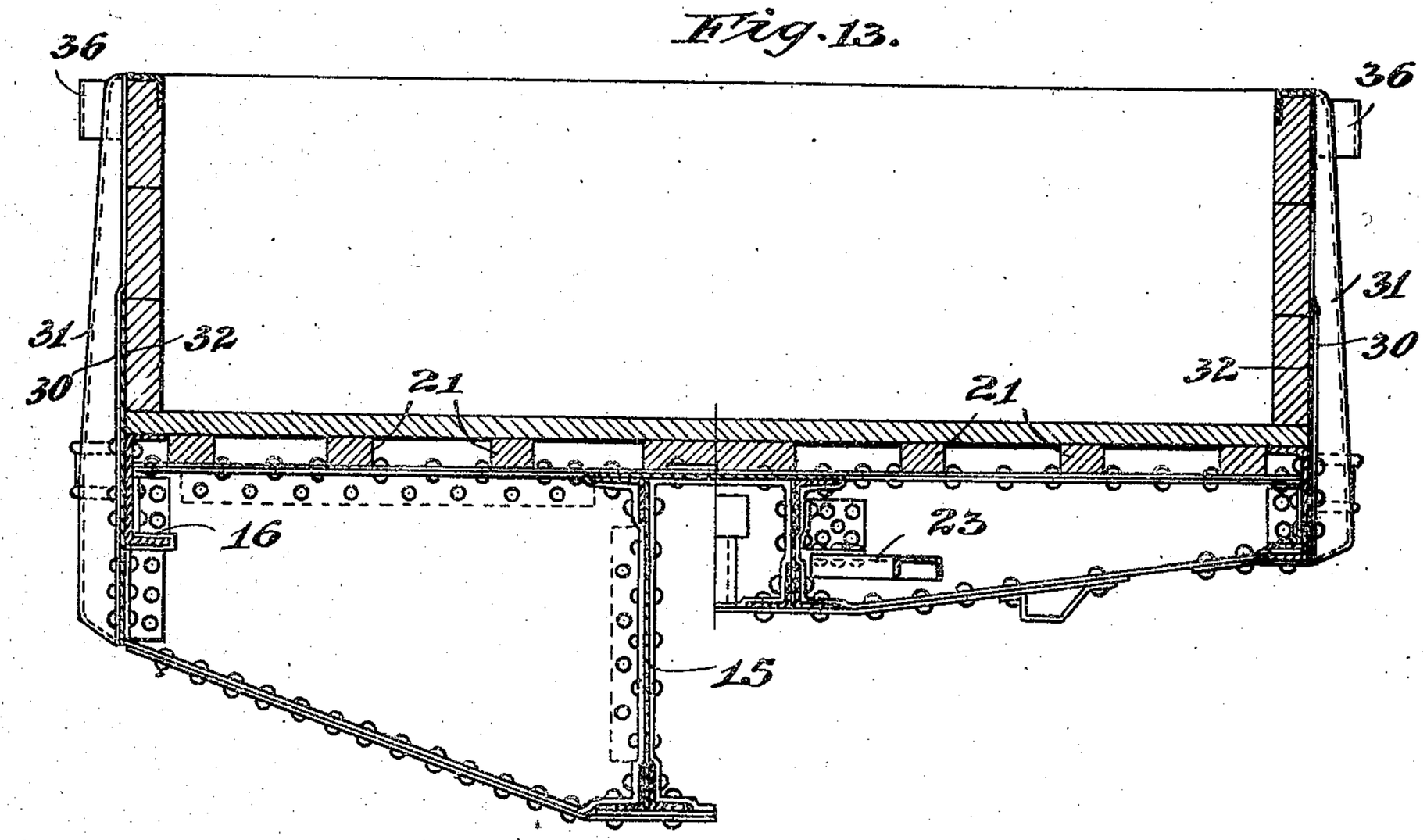


Fig. 13.



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UNITED STATES PATENT OFFICE.

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

CAR.

No. 889,588. Specification of Letters Patent. Patented June 2, 1908.

Application filed June 7, 1907. Serial No. 377,759.

To all whom it may concern:

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

My invention relates to improvements in various parts of a railway car, and more especially concerns improvements in the stakes, the anchorage for the safety chains, the mounting and supports for corner stakes or posts, and in the arrangement, construction, and connection of the center and draft sills.

On the accompanying drawings, forming a part of this specification, I have illustrated several forms of cars embodying my various improvements, and on said drawings Figure 1 is a plan view of a portion of a gondola car with the flooring and upright walls removed from one longitudinal half; Fig. 2 is a side elevation of the car shown in Fig. 1; Fig. 3 is a plan view of a portion of a car underframe embodying several features of my invention; Fig. 4 is a central longitudinal section of a car underframe shown in Fig. 3 with the car body mounted thereon; Fig. 5 is a vertical section on line 5, 5 of Fig. 4; Fig. 6 is a partial side elevation of a gondola car similar to that shown in Fig. 2 but having bellied side sills; Fig. 7 is a vertical section through the end sill, gusset plate, and diagonal brace of the underframe on an enlarged scale, illustrating the manner of supporting and attaching the vertical corner post to the gusset plate and brace; Fig. 8 is a horizontal section on an enlarged scale, illustrating the parts shown in Fig. 7; Fig. 9 illustrates the manner of attaching the safety chain anchors to the body bolster; Fig. 10 is an end view of a car embodying my invention and having end walls hinged so as to drop and lie upon the floor of the car; Fig. 11 is a view similar to Fig. 10 of a gondola car embodying my invention; Fig. 12 is an end view of a drop end car having a modified form of corner post; and Fig. 13 is a vertical cross section of the car on two different planes.

The car shown in Figs. 1 and 2 has bellied center sills 15 and channel side sills 16 of uniform depth. At each end it is equipped with a channel end sill 17 having its flanges extended outwardly, and the underframe is also supplied with a body bolster 18, a needle beam 19, and cross bearers or transoms 20. Resting upon the body bolsters, needle beams, and cross bearers are longitudinal stringers 21 to which is secured the flooring 22. Diagonal channel braces 23 with their flanges extended downwardly are provided at the ends of the car, their outer ends being fastened to the bottom flanges of the side sills 16 and end sill 17, the details of this construction being shown most clearly in Figs. 7 and 8. A gusset plate 24 with an upturned flange 25 is fastened by means of said flange to the vertical webs of the end and side sills, and riveted to each gusset plate, the rivets also passing through the diagonal braces, is an angle plate 26 whose upstanding flange 27 is riveted to one leg of an upright angle bar 28 constituting a corner post. By means of a construction of this character I secure an especially firm and rigid connection for the corner posts with the underframe of the car, the same being located within the side and end walls of the car body. This car has on each side a plurality of side stakes 29 which lie against the outer faces of the side sills 16, being riveted thereto at 30. Each of these stakes consists of a plate portion 30 having a hollow outstanding tapered rib 31 extended longitudinally thereof, the inner portion of the rib being open at the back side of the plate 30. If desired, these stakes may be made of sheet metal pressed to shape, but in order to strengthen them at the point where they receive the greatest strain, I fasten to the inner surface of each, and extending preferably only a portion of its length, a plate 32 which is riveted or otherwise secured to the plate or flanges 30 of the stake, the plate 32 extending from the bottom of the stake some distance above the top edge of the side sill, as is clearly shown in Fig. 11. In order to make the inner surface of the stake and the tension plate 32 substantially flush and smooth, the upper portion of the stake is offset inwardly at 33, whereby the stake may be readily and easily fastened in place and present a smooth surface against which the planks 34 forming the side wall of the car may lie or rest. In addition to these metallic side stakes, I provide the car with pockets 35 secured to the side sill and similar pockets 36 secured to the side wall which are adapted to receive and accommodate wooden stakes of the usual character.

In Fig. 3 I have illustrated a new and improved means for holding the safety chain

anchors in place, this construction being also shown in Fig. 9. It has been customary and usual to bolt or otherwise secure the chain anchor to the end sill, this being the sole and only attachment of the anchor to the car underframe. It has been found, however, that such a construction is unsatisfactory for the reason that the anchor or loop to which the chain is attached sometimes becomes loosened or tends to pull and distort the end sill. Referring to Fig. 9, it will be noticed that the base of the eye or anchor 37 rests against the outer face of the web of the channel end sill 17, a bolt or stem 38 equipped with a nut 39 passing through the end sill and through a down-turned ear or end 40 of a strap or bar 41, the other end of which lies upon and is riveted to the top of the body bolster 18. To each of these anchors is secured the usual safety chain 42. It will be noted that the pull on the chain is transmitted to the body bolster through the bar or strap 41, thereby overcoming the tendency to bow outwardly and distort the end sill 17.

It will be noticed that the car shown in Fig. 4 has an end 43 hinged at 44 and adapted to be turned downwardly inwardly so as to lie on the car bottom. The corner posts which hold the end of the car in its normal vertical position may be tapered upwardly like those characterized 45 in Fig. 10, or may be of uniform width like those characterized 46 in Fig. 12. In either case, however, I provide each end of the car with an offset or bent strap 47 behind which is adapted to pass a hinged or pivoted locking bar 48 to retain the end wall in upright normal position.

Referring to my improvements in draft mechanism of the car, attention is directed to the fact that the bellied plate 49 of each center sill passes outwardly beyond the bolster to the point 50, and has top and bottom marginal stiffening and strengthening angle bars 51, 52, 53, and 54, as shown in Fig. 5, each of the outer top bars 51 extending beyond the end of the center sill outwardly to the end sill 17, the same being riveted to the draft sill members or plates 55, each of which has along its bottom edge an integral marginal flange 56 and at its end a vertical integral flange 57. Each draft sill 55 overlaps the end of its corresponding center sill plate 49 and is secured thereto by the rivets 58 as well as by the rivets which hold in place the top and bottom marginal angle bars 51, 52, 53, and 54. This form of draft construction is simple and unusually strong because the draft sill is rigidly and firmly attached to the center sill and has top and bottom flanges and an end flange which may be riveted to the web of the channel end sill.

Although I have described the details of the structural features of the various parts of the cars, it is to be understood that my invention is not limited and restricted to such details, but that the structure may be modified in material respects without departure from the substance and heart of my invention.

I claim:

1. A stake for a railway car comprising a member substantially U-shape in cross section, and a substantially flat plate fastened to the flanges of said member and closing its open side, substantially as described.

2. In a railway car, the combination of a stake of substantially U-shape in cross section, and a substantially flat plate of less length than said stake fastened to the flanges thereof and closing the open side of the stake for a portion of its length, substantially as described.

3. In a railway car, the combination of a stake of substantially U-shape in cross section, and a substantially flat plate of less length than said stake fastened to the flanges thereof and closing the open side of the stake for a portion of its length, the part of the stake not covered by said plate being offset to bring its surface and that of the plate substantially flush, substantially as described.

4. In a railway car, the combination of a body bolster, a safety chain, an anchor for said chain, and means connecting said anchor to said body bolster, substantially as described.

5. In a railway car, the combination of a body bolster, an end sill, a safety chain, an anchor for said chain fastened to said end sill, and means connecting said anchor to said body bolster, substantially as described.

6. In a railway car, the combination of a corner gusset plate, an upright corner stake or post, and means to fasten said stake or post to said gusset plate, substantially as described.

7. In a railway car, the combination of a side sill, an end sill, a gusset plate fastened to said side and end sills, an upright corner stake or post, and means to fasten said stake or post to said gusset plate, substantially as described.

8. In a railway car, the combination of a side sill, an end sill, a gusset plate fastened to said side and end sills, an upright corner angle stake or post, and an angle fastened to said stake or post and to said gusset plate, substantially as described.

9. In a railway car, the combination of a side sill, an end sill, a gusset plate fastened to said side and end sills, a diagonal brace fastened to said gusset plate, an upright corner stake or post, and means to fasten said stake or post to said gusset plate and diagonal brace, substantially as described.

10. In a railway car, the combination of a side sill, an end sill, a gusset plate fastened to said side and end sills, a diagonal brace fastened to said side and end sills and to said gusset plate, an upright corner stake or post, and an angle plate fastening said stake or post to said gusset plate and diagonal brace, substantially as described.

11. In a railway car, the combination of a center sill, a draft sill overlapping said center sill and riveted thereto, a top angle bar extending substantially the full length of said center and draft sills, said draft sill having an integral lower marginal flange, and an angle bar along the lower marginal edge of said center sill and riveted thereto, substantially as described.

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