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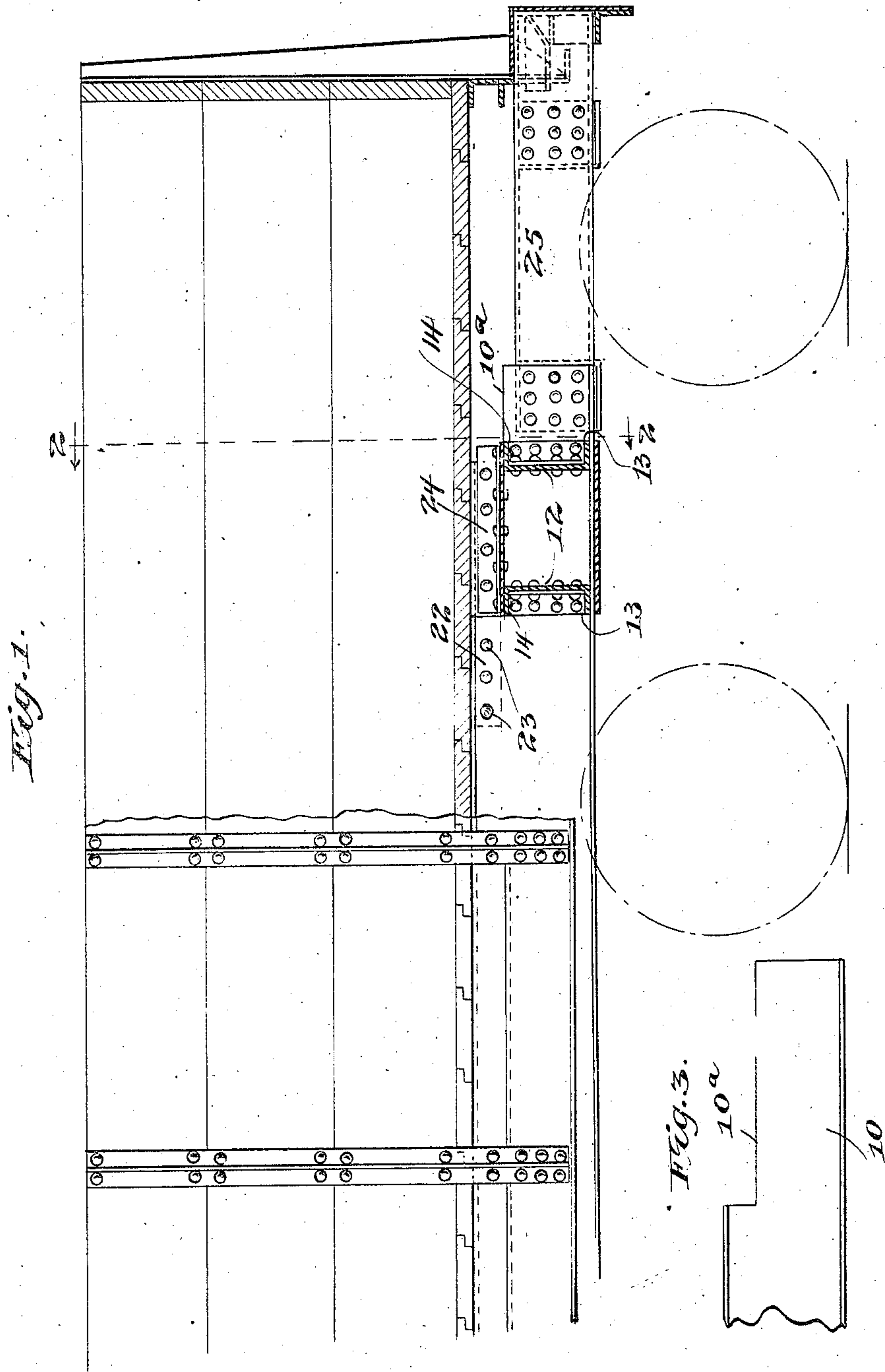
PATENTED FEB. 5, 1907.

E. I. DODDS.

SILL AND BOLSTER CONSTRUCTION FOR RAILWAY CARS.

APPLICATION FILED AUG. 23, 1905.

3 SHEETS—SHEET 1.



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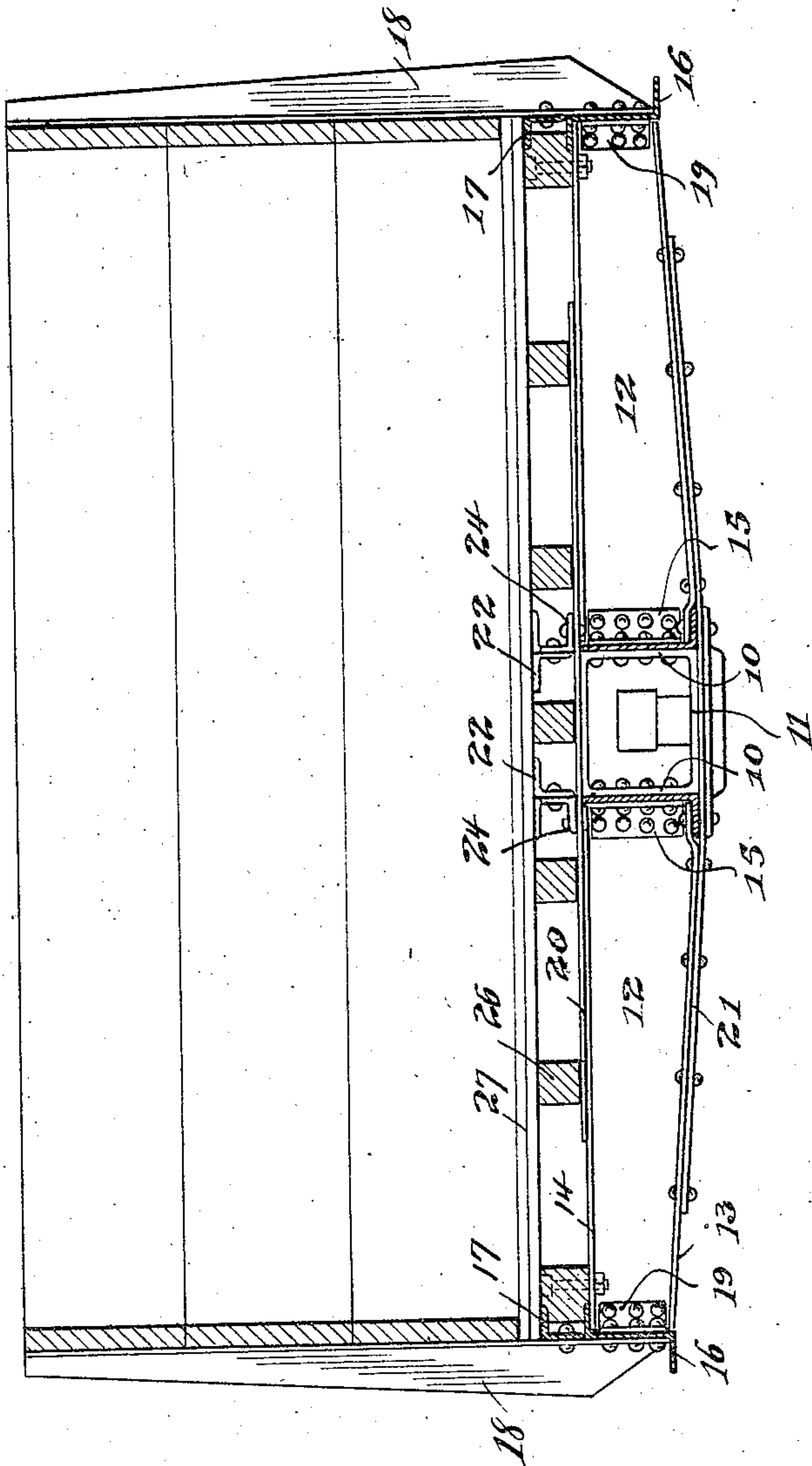
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3 SHEETS—SHEET 2.

Fig. 2.



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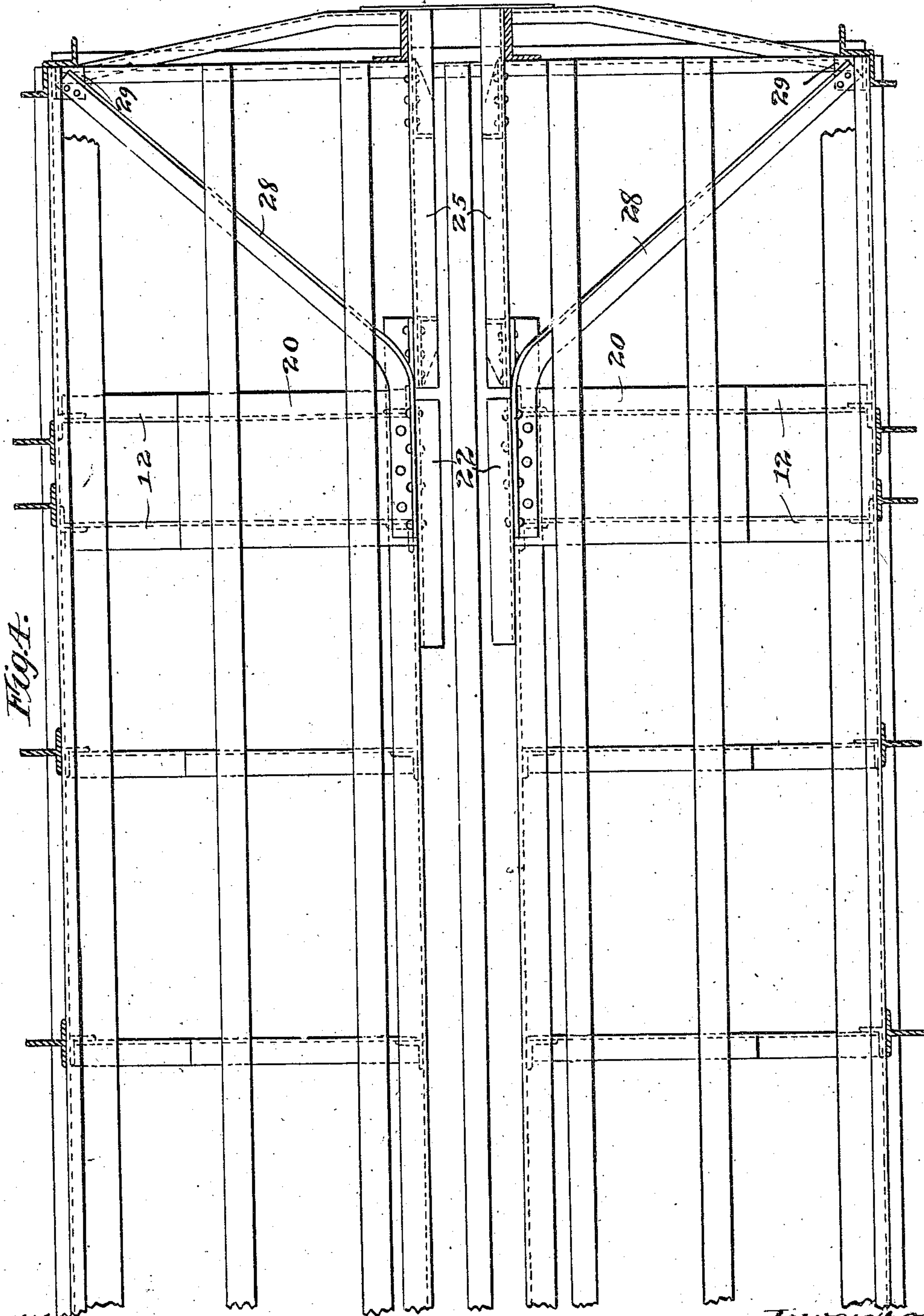


Fig. 4.

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UNITED STATES PATENT OFFICE.

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SILL AND BOLSTER CONSTRUCTION FOR RAILWAY-CARS.

No. 842,872.

Specification of Letters Patent.

Patented Feb. 5, 1907.

Application filed August 23, 1905. Serial No. 275,380.

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 Sill and Bolster Construction for Railway-Cars, of which the following is a specification.

My invention concerns the construction of the sills and bolsters of railway-cars; and its principal objects are the provision of means for securing together the center sills and body-bolsters in such a manner that they can be wholly or partially taken apart expeditiously and without removing any considerable number of rivets, and the employment of diagonal braces for the underframe, which also fasten a tie-plate of the bolster to the center sills.

In the accompanying drawings I have illustrated two embodiments of my invention, wherein—

Figure 1 is a partial side elevation and partial longitudinal section of a car embodying my invention. Fig. 2 is a cross-section of the car on the line 2 2 of Fig. 1 as viewed in the direction indicated by the arrows. Fig. 3 is a side view of the end portion of one of the channel center sills, and Fig. 4 is a plan view of the underframe of a car embodying a modified form of my invention.

Referring first to the species illustrated in Figs. 1 and 2, 10 10 are channel center sills spaced apart by a rectangular frame 11, the flanges of the sills extending outwardly toward the sides of the car, as shown in Fig. 2. The body-bolster comprises spaced channel-beams 12 12 with integral flanges 13 and integral upper flanges 14, the inner ends of beams 12 being secured to the webs of center sills 10 by angle-plates 15, rivets passing through the angle-plates, center sills, and spacing members 11, as shown. The side sills each comprise a Z-beam 16 and an angle-bar 17, running longitudinally of the car above the Z-beam. Stakes 18 are fastened to members 16 and 17 by means of their flanges, thus forming what is, in effect, a plate-girder side for the car. Angle-plates 19 fasten the outer ends of the body-bolster beams to the side sills 16, rivets passing through these parts and also through the flanges of the side stakes 18. The top tie

or tension plate 20 is secured to the upper flanges of the body-bolster beams passing over reduced ends of the center sills described below. The bottom tie or compression plate 21 is riveted to the lower flanges of the beams 12, passing under the center sills and spacer 11. The ends of the center sills are reduced in depth by cutting out a section at 10^a to allow the passage of the top tie-plate, thereby removing for a portion of the length of the center sills its top flange and a part of the web, Fig. 3, the remaining portion of the web extending upwardly from its lower flange adjacent to the under side of the top tie-plate 20, as shown in Fig. 2. An angle-bar 22 is secured to the inner side of the web of each center sill by means of rivets 23, each of said angle-bars being fastened to a portion of the center sills where it is of full depth, running longitudinally of the sill and extending over the top plate 20. To the outer side of each of these angle-bars 22 I rivet an additional angle-bar 24, whose lower flange is attached to the top tie-plate 20 and to the upper flanges 14 of the body-bolster beams, as shown in Fig. 1. To the ends of the center sills which protrude beyond the body-bolster I rivet smaller channel draft-sills 25, as illustrated. Wooden stringers 26 are mounted on top of the bolster, as shown in Fig. 2, the floor-boards 27 being fastened thereto in any approved manner.

It will be apparent from the construction that I have removed a portion of the upper part of each center sill to allow the passage of the top tie-plate of the bolster-beams, and in order to reinforce the parts and compensate for this cutting I rivet to each center sill an angle-bar which projects over the tie-plate, being fastened to the latter by an additional angle-bar and rivets. When it becomes desirable to remove the top tie-plate, this operation can be quickly and easily effected by merely removing the rivets 23, which fasten the angle-bars 22 to the center sills and the rivets which secure the tie-plate to the upper flanges of the body-bolster beams.

The modified construction illustrated in Fig. 4 is in all respects similar to that shown in Figs. 1 and 2 except that instead of using short angle-bars 24, which fasten together

the bars 22 and the tie-plate, I employ angle-braces 28, which at their inner ends are riveted to the angle-bars 22 and to the top tie-plate 20 of the body-bolster, performing the same function that the angle-bars 24 do in the structure shown in Figs. 1 and 2. These angle-braces 28 are bent outwardly, as shown in Fig. 4, being secured by means of rivets to the corner gusset-plates 29. Such a construction permits the passage of the top tie-plate over the reduced portions of the center sills, at the same time securing the parts firmly together and strengthening the end construction of the underframe of the car.

It is obvious that various changes may be made in the details of the construction shown and described; but inasmuch as my invention is not limited to these details I do not wish to be restricted to the particular parts illustrated, since obvious modifications fall within the scope of my invention as defined by the claims.

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

I claim—

1. In a railway-car, the combination of center sills projecting beyond the body-bolsters, each of said sills being reduced in depth for a portion of its length, draft-sills attached to the projecting ends of said center sills, body-bolster beams, and a tie-plate fastened to said body-bolster beams passing over the reduced portions of said center sills, substantially as described.

2. In a railway-car, the combination of center sills, each reduced in depth for a portion of its length, body-bolster beams, a tie-plate fastened to said body-bolster beams passing over the reduced portions of said center sills, and one or more bars fastened to said center sills and to said tie-plate, substantially as described.

3. In a railway-car, the combination of center sills, each reduced in depth for a portion of its length, body-bolster beams, a tie-plate fastened to said body-bolster beams, passing over the reduced portion of said center sills, a bar fastened to one of said center sills, and a second bar secured to said first bar and to said tie-plate, substantially as described.

4. In a railway-car, the combination of center sills, each reduced in depth for a portion of its length, body-bolster beams, a tie-plate fastened to said body-bolster beams passing over the reduced portions of said center sills, and one or more angle-bars riveted to said center sills and fastened to said tie-plate, substantially as described.

5. In a railway-car, the combination of center sills, each reduced in depth for a portion of its length, body-bolster beams, a tie-plate fastened to said body-bolster beams passing over the reduced portions of said

center sills, one or more angle-bars riveted to said center sills, and one or more angle-bars riveted to said first-mentioned angle bar or bars and to said tie-plate, substantially as described.

6. In a railway-car, the combination of center sills, each reduced in depth for a portion of its length, body-bolster beams each having a flange along its upper edge, a tie-plate riveted to said flanges and passing over the reduced portions of said center sills, and one or more bars riveted to said center sills and secured to said tie-plate, substantially as described.

7. In a railway-car, the combination of center sills, each reduced in depth for a portion of its length, body-bolster beams each with a flange along its upper edge, a tie-plate fastened to said flanges, one or more bars riveted to said center sills, and one or more bars securing said bar or bars to said tie-plate, substantially as described.

8. In a railway-car, the combination of center sills, each reduced in depth for a portion of its length, body-bolster beams, a tie-plate fastened to said beams passing over the reduced portions of said center sills, and one or more bars riveted to the full-depth portion of said center sills and fastened to said tie-plate, substantially as described.

9. In a railway-car, the combination of center sills, each reduced in depth for a portion of its length, body-bolster beams, a tie-plate fastened to said body-bolster beams passing over the reduced portions of said center sills, a bar or bars riveted to the full-depth portion of said center sills, and an angle bar or bars securing said bar or bars to said tie-plate, substantially as described.

10. In a railway-car, the combination of center sills, each reduced in depth for a portion of its length, body-bolster beams, a tie-plate fastened to said body-bolster beams passing over the reduced portions of said center sills, and diagonal braces fastened to said tie-plate and to said sills, substantially as described.

11. In a railway-car, the combination of center sills, each reduced in depth for a portion of its length, body-bolster beams, a tie-plate fastened to said body-bolster beams passing over the reduced portions of said center sills, a bar riveted to each of said center sills, and a diagonal brace fastened to each of said bars and to said tie-plate, substantially as described.

12. In a railway-car, the combination of center sills each reduced in depth for a portion of its length, body-bolster beams, a tie-plate fastened to said body-bolster beams passing over the reduced portions of said center sills, and diagonal angle-braces fastened to said tie-plate and to said sills, substantially as described.

13. In a railway-car, the combination of

center sills, each reduced in depth for a portion of its length, body-bolster beams, a tie-plate fastened to said body-bolster beams passing over the reduced portions of said center sills, an angle-bar riveted to each of said center sills, a gusset-plate at each of the adjacent corners of said car, and diagonal angle-braces each secured at its inner end to one of said angle-bars, and at its outer end to one of said gusset-plates, substantially as described.

14. In a railway-car, the combination of center sills, each reduced in depth for a portion of its length, body-bolster beams each having integral flanges along its upper and lower edges, a top tie-plate riveted to said upper flanges passing over the reduced portions of said center sills, a bottom tie-plate riveted to the lower flanges of said bolster-beams passing beneath said center sills, one or more bars riveted to said center sills, and one or more bars securing said first bar or

bars to said top tie-plate, substantially as described.

15. In a railway-car, the combination of center sills, each reduced in depth for a portion of its length, body-bolster beams each having integral flanges along its upper and lower edges, a top tie-plate riveted to the upper flanges of said body-bolster beams passing over the reduced portions of said center sills, a bottom tie-plate riveted to the lower flanges of said body-bolster beams, gusset-plates at the adjacent corners of the car-frame, an angle-bar riveted to each of said center sills extending over said top tie-plate, and diagonal braces secured at their inner ends to said angle-bars and at their outer ends to said gusset-plates, substantially as described.

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