No. 825,040. PATENTED JULY 3, 1906.

E. I. DODDS.

METALLIC CAR BODY.

APPLICATION FILED OCT. 30, 1905.

3 SHEETS—SHEET 1.

Fig. 1.

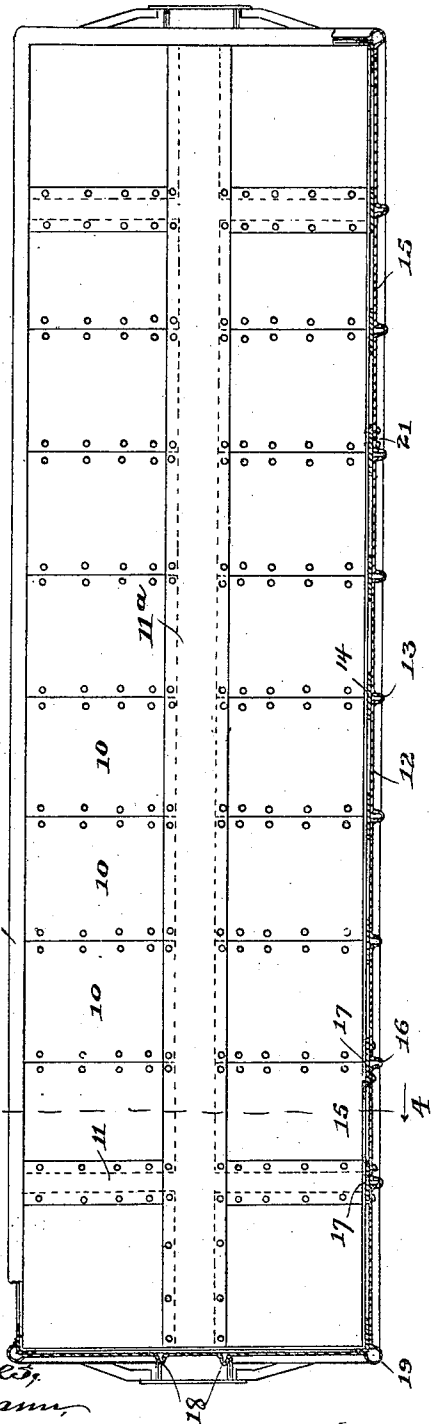
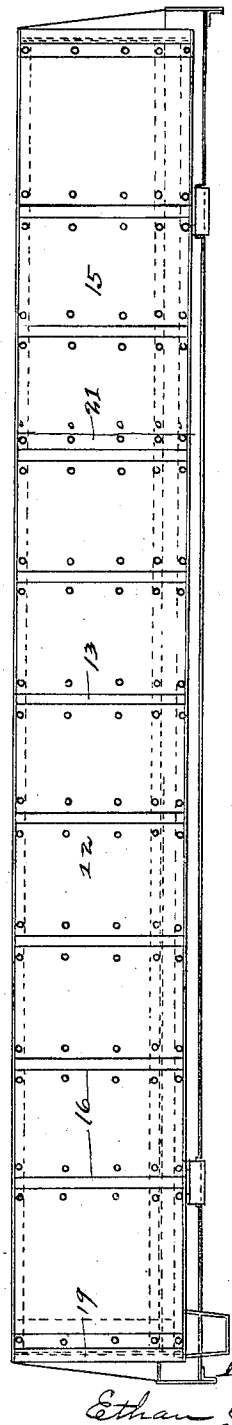


Fig. 2.



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3 SHEETS—SHEET 2.

Fig. 3.

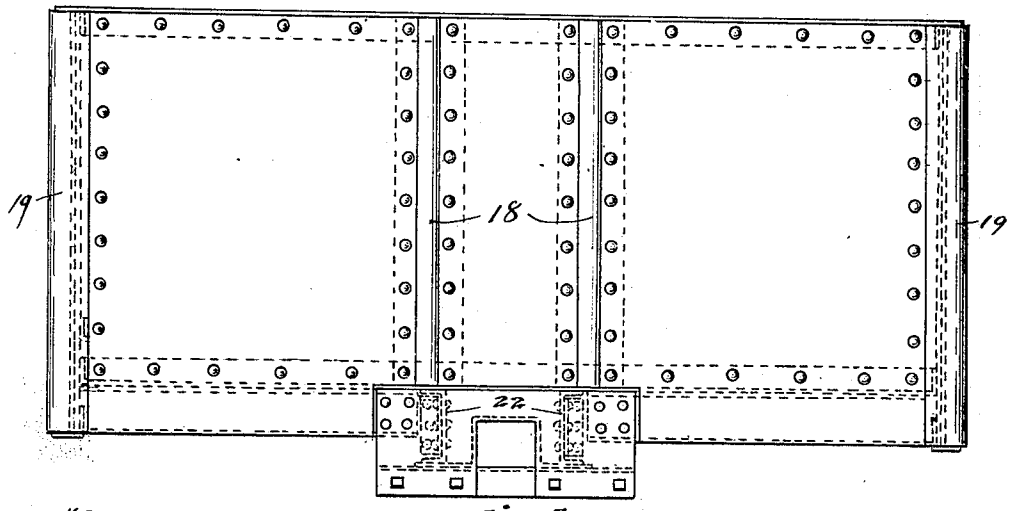


Fig. 4.

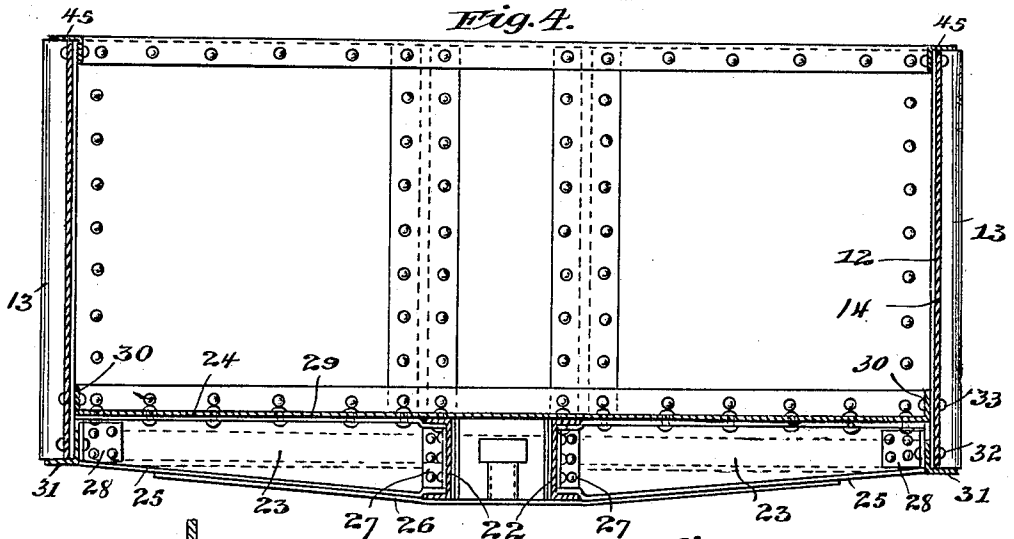


Fig. 7.

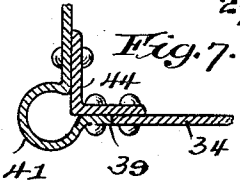
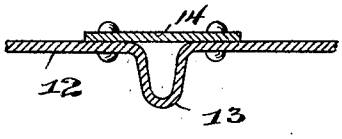


Fig. 5.



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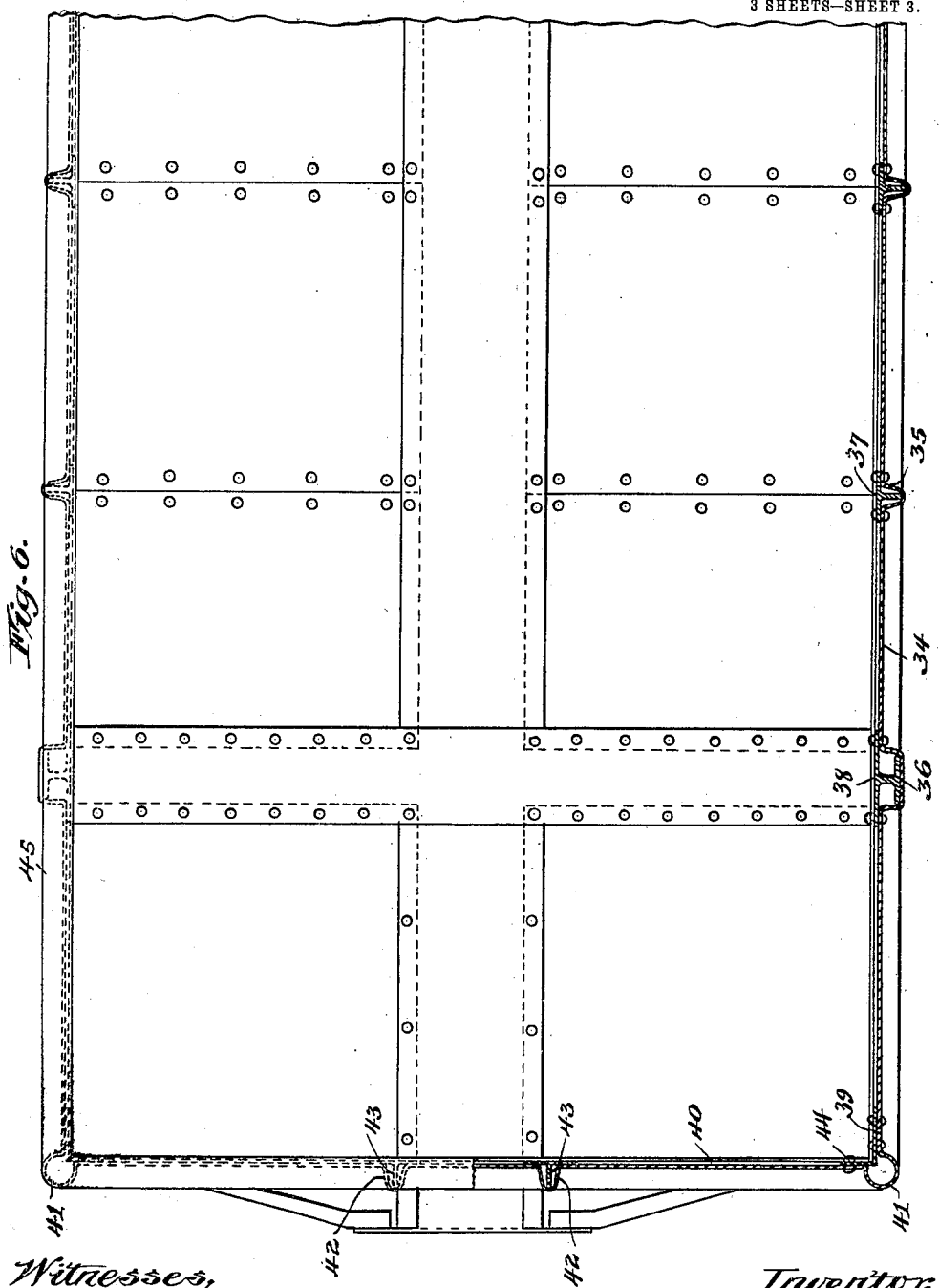
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3 SHEETS—SHEET 3.

Fig. 6.



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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-BODY.

No. 825,040. Specification of Letters Patent. Patented July 3, 1906.

Application filed October 30, 1905. Serial No. 285,149.

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-Bodies, of which the following is a specification.

My present invention concerns metallic car-bodies of railway-cars and the means employed for attaching them to the car-underframes.

A car embodying the principles of my invention has its sides or ends, or both, provided with integral hollow outwardly-extended ribs or stakes. To strengthen the structure, I tie together by means of a flat plate or flanged bar the two portions of the metal sheet on each side of each stake.

Since the stakes can be stamped or pressed out of the planes of the sheets without heating the latter, my improved form of car-body can be cheaply manufactured and at the same time possess an attractive appearance and greater strength than has been usual.

Preferred mechanical embodiments of my invention are illustrated in the accompanying drawings, wherein—

Figure 1 is a plan view, partly in section, of a car embodying one species of my invention. Fig. 2 is a side elevation of the car illustrated in Fig. 1. Fig. 3 is an enlarged end elevation of the car-body illustrated in Figs. 1 and 2. Fig. 4 is a vertical transverse section on the line 4 4 of Fig. 1 as viewed in the direction indicated by the arrows. Fig. 5 is an enlarged section of a portion of the side of the car-body shown in Figs. 1 and 2. Fig. 6 is a fragmentary plan view, partly in section, of a car embodying a modification of my invention. Fig. 7 is an enlarged horizontal section of a corner portion of the car shown in Fig. 6.

The car-body illustrated in Fig. 1 has the usual floor-plates 10 and the transverse and longitudinal strips 11 and 11^a, respectively. The center portion of each car side comprises a metallic plate 12, which has pressed out of the plane of its surface a series of outwardly-extended hollow integral ribs or stakes 13, each having a reinforcing strap or plate 14, which is riveted to the portions of the plate 12 on the opposite sides of the stake, this construction being clearly shown in Figs. 1 and 5. Each plate 15, which comprises an end portion of the side of the car-body and also one-half of the end of the same, has one or more integral side stakes 16, each with a reinforcing-plate 17 in all respects like the stakes and plates 13 and 14, and it also has one or more similar end stakes 18 and a rounded corner-stake 19 and angle-plate 20, tying together and secured to the end and side portions of the plate on opposite sides of corner-stake 19. The ends of plate 15 adjacent to the plates 12 are fastened thereto by means of an additional row of rivets 21 in conjunction with the adjacent plate 17, which in this instance acts also as a butt-strap for the splice, as shown in Fig. 1.

The underframe of the car comprises twin spaced center channels 22 and transverse beams 23, each of which has an upper integral flange 24 and a similar lower flange 25, each oppositely disposed pair of the latter being tied together by a compression-plate 26, riveted thereto and passing under the center sills, as shown in Fig. 4. Angle-plates 27 secure the inner ends of the transverse beams 23 to the center sills, and an angle-plate 28 is also riveted at the outer end of each beam 23. Floor-plates 10, which may extend across the whole width of the car or may reach merely from the side to the adjacent center sill, are provided at their outer edges with integral upturned flanges 30. A longitudinal angle-bar 31 runs lengthwise of each side of the car in the position shown, and rivets 32 secure together side plates 12 or 15, as the case may be, having the integral hollow stakes 13 or 16, reinforcing straps or plates 14 or 17, angle-bar 31, and angle-plate 28. Additional rivets 33 fasten together side plates 12, reinforcing-straps 14, and the upturned flanges 30 of the floor-plates. By such a construction the sides and end plates of the car, including even the floor-plates, if desirable, can be fastened together before the structure is secured to the underframe, and the whole body of the car can be readily removed from the underframe by severing a comparatively small number of rivets.

In Fig. 6 I have illustrated a modification wherein each side plate 34 adjacent to the end of the car is provided with a plurality of integral side ribs or stakes 35 and 36, the latter being the larger and disposed opposite the ends of the body-bolsters. In this modi-

fication for reinforcing the side stakes 35 I employ T-shaped bars 37, the oppositely-extended flanges of which are riveted to the metal plate on opposite sides of each stake, the remaining portion of the bar fitting in the hollow stake, as is clearly shown in Fig. 6. Within each of the larger hollow stakes 36 is placed an I-bar 38, similarly riveted to the side plate, the web and outer flanges fitting in the stake, as is also illustrated in Fig. 6. In this modification the side plates 34 and end plates 40 are not integral, the joint uniting the two being near the corner of the car at the point 39. In this modified structure the corner-stakes 41 and end stakes 42 are integral with the single plate 40, which forms the whole end of the car-body, the stakes 42 each being equipped with a reinforcing T-bar 43 in all respects similar to the bars 37. On the inside of each corner I preferably employ an upright angle-bar 44, riveted to the end plate 40 at each side of the corner-stake 41, one portion of the angle-bar serving also as a butt-strap for the splice between the end and side plates. Fig. 7, which is an enlarged section of these parts, illustrates the construction clearly. A coping angle-bar 45 is preferably provided at the top edge of the sides and ends of both forms of car-bodies shown and described.

It is evident that minor mechanical changes may be made in a construction of this kind without departing from the substance or sacrificing any of the benefits of the invention.

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

I claim—

1. A railway-car having a side or end plate with an integral stake disposed out of the plane of the plate, and a reinforcing member fastened to and tying together the two portions of the plate on opposite sides of the stake, substantially as described.

2. A railway-car including a side or end plate having a hollow stake integral therewith pressed out of the plane of the plate, and a reinforcing member fastened to and tying together the two portions of the plate on opposite sides of the stake, substantially as described.

3. A railway-car including a side or end plate having a hollow rib integral therewith forming a stake and pressed out of the plane of the plate, and a reinforcing member fastened to and tying together the two portions of the plate on opposite sides of the stake, said reinforcing member having a portion fitting in the hollow rib, substantially as described.

4. A railway-car including a side or end plate having a hollow stake integral therewith pressed out of the plane of the plate, and an I-bar, the flanges at one edge of the web of said I-bar fastened to and tying together the two portions of the plate on opposite sides of the stake, the remaining portion of said bar fitting within the hollow stake, substantially as described.

5. A railway-car having a side or end plate with a hollow corner-stake integral with said plate, substantially as described.

6. A railway-car including a side or end plate having a hollow corner-stake integral therewith, and a reinforcing member fastened to and tying together the two portions of the plate on opposite sides of the stake, substantially as described.

7. A railway-car including a side or end plate having a hollow corner-stake integral therewith, and a reinforcing angle-bar fastened to and tying together the two portions of the plate on opposite sides of the stake, substantially as described.

8. A railway-car having an integral side and end plate and a hollow corner-stake integral therewith, substantially as described.

9. A railway-car having an integral side and end plate and a corner-stake integral therewith, said side plate also having one or more side stakes integral therewith, substantially as described.

10. In a railway-car, the combination of a transverse beam having a flange at its outer end, a longitudinal angle-bar fastened to said flange, and a side plate having one or more stakes integral therewith fastened to said flange and angle-bar, substantially as described.

11. In a railway-car, the combination of a transverse beam having flanges at its top edge and outer end, a flanged floor-plate secured to said top flange, a longitudinal angle-bar secured to the end flange of said transverse beam, and a side plate having one or more stakes integral therewith secured to the flange of said floor-plate and to said angle-bar and end flange of said transverse beam, substantially as described.

12. In a railway-car the combination of a transverse beam having a top flange, a flanged floor-plate fastened to said top flange, an angle-plate fastened to the outer end of said transverse beam, a longitudinal angle-bar, a side plate having a hollow stake integral therewith, a reinforcing member tying together the two portions of said plate on opposite sides of said stake, rivets holding together the flange of said floor-plate, said reinforcing member and said side plate, and additional rivets securing together said side plate, reinforcing member, longitudinal angle-bar, and angle-plate, substantially as described.

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