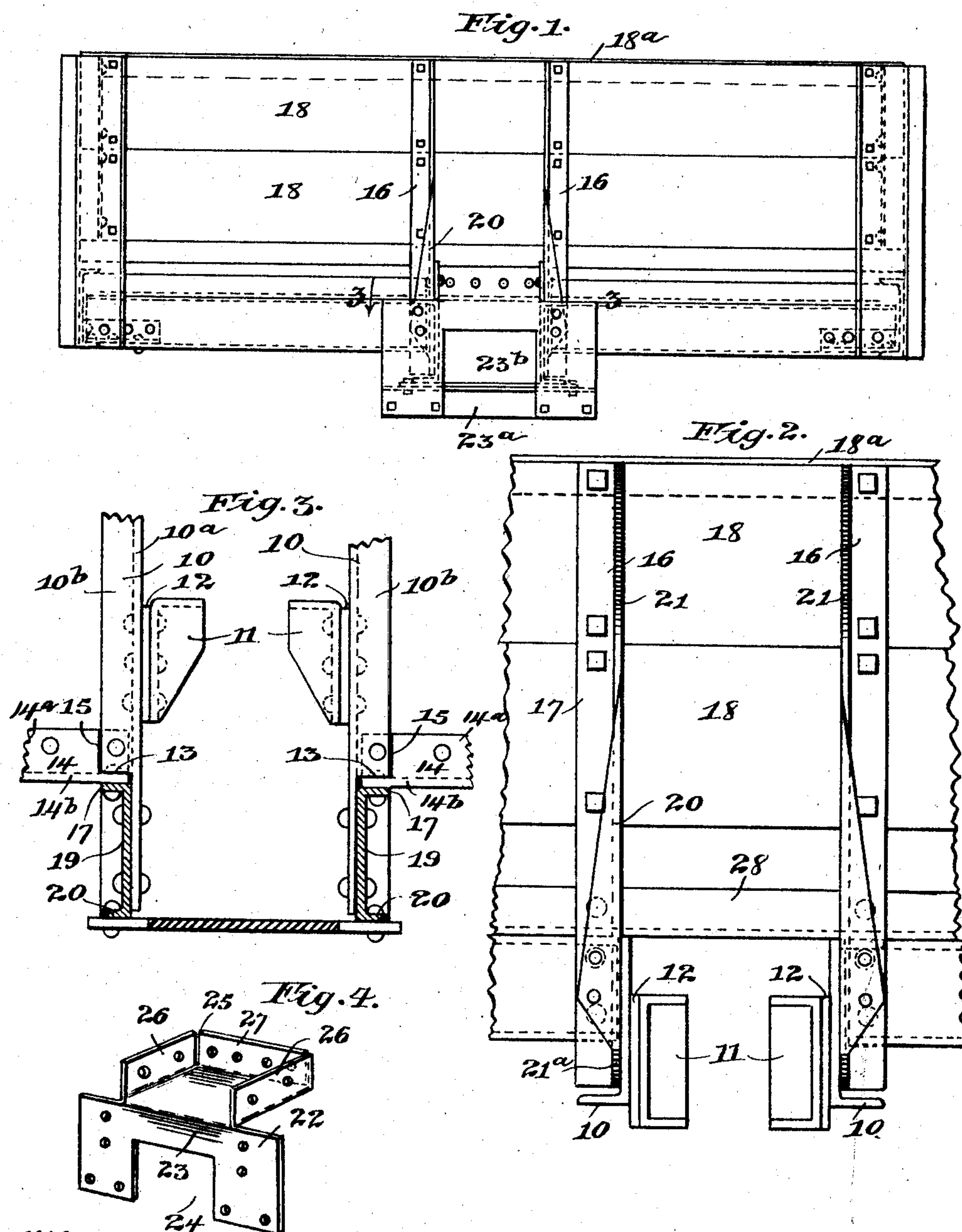


No. 840,829.

PATENTED JAN. 8, 1907.

E. I. DODDS.  
END CONSTRUCTION FOR CARS.  
APPLICATION FILED SEPT. 7, 1905.

3 SHEETS—SHEET 1.



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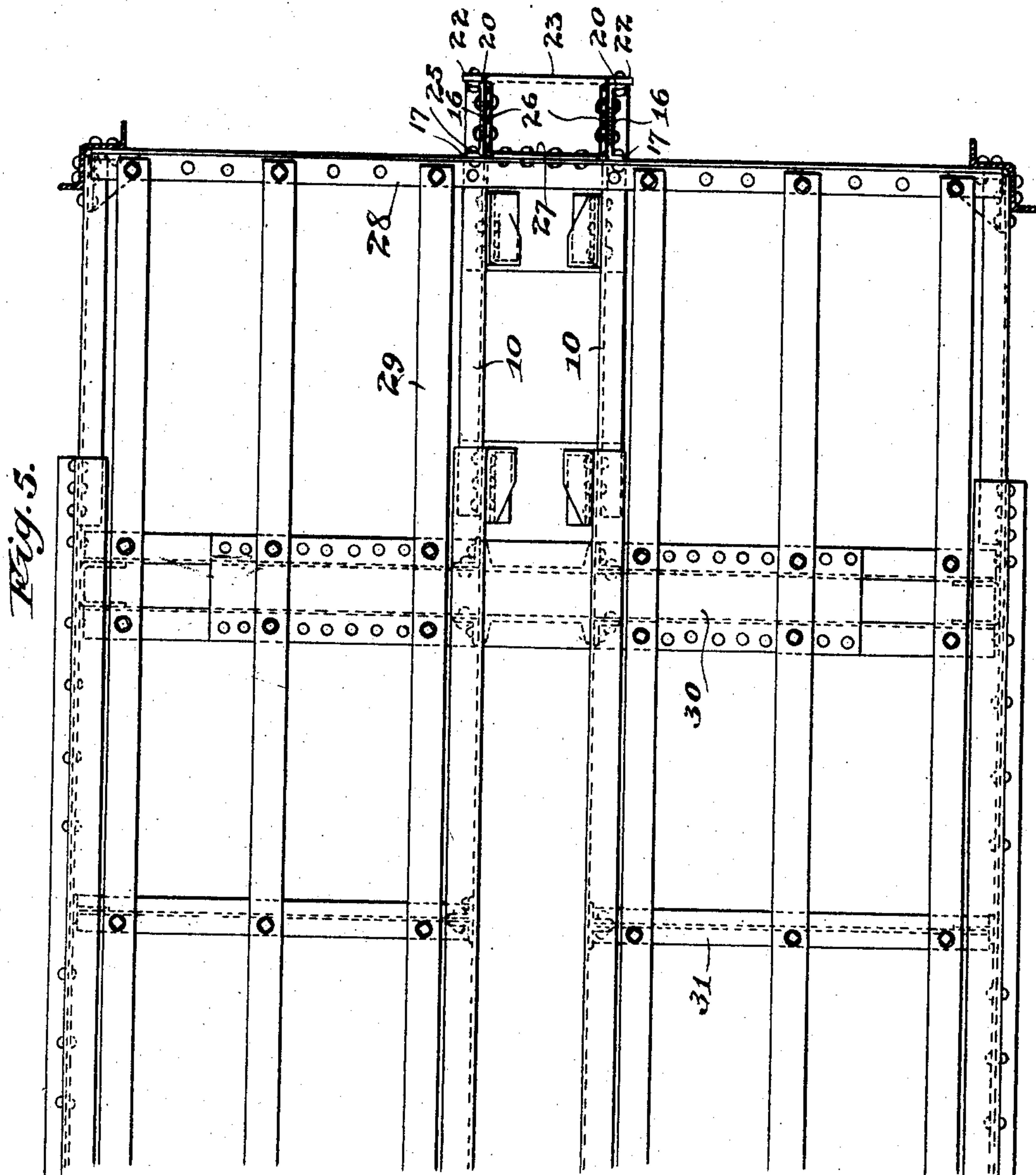
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3 SHEETS—SHEET 2.



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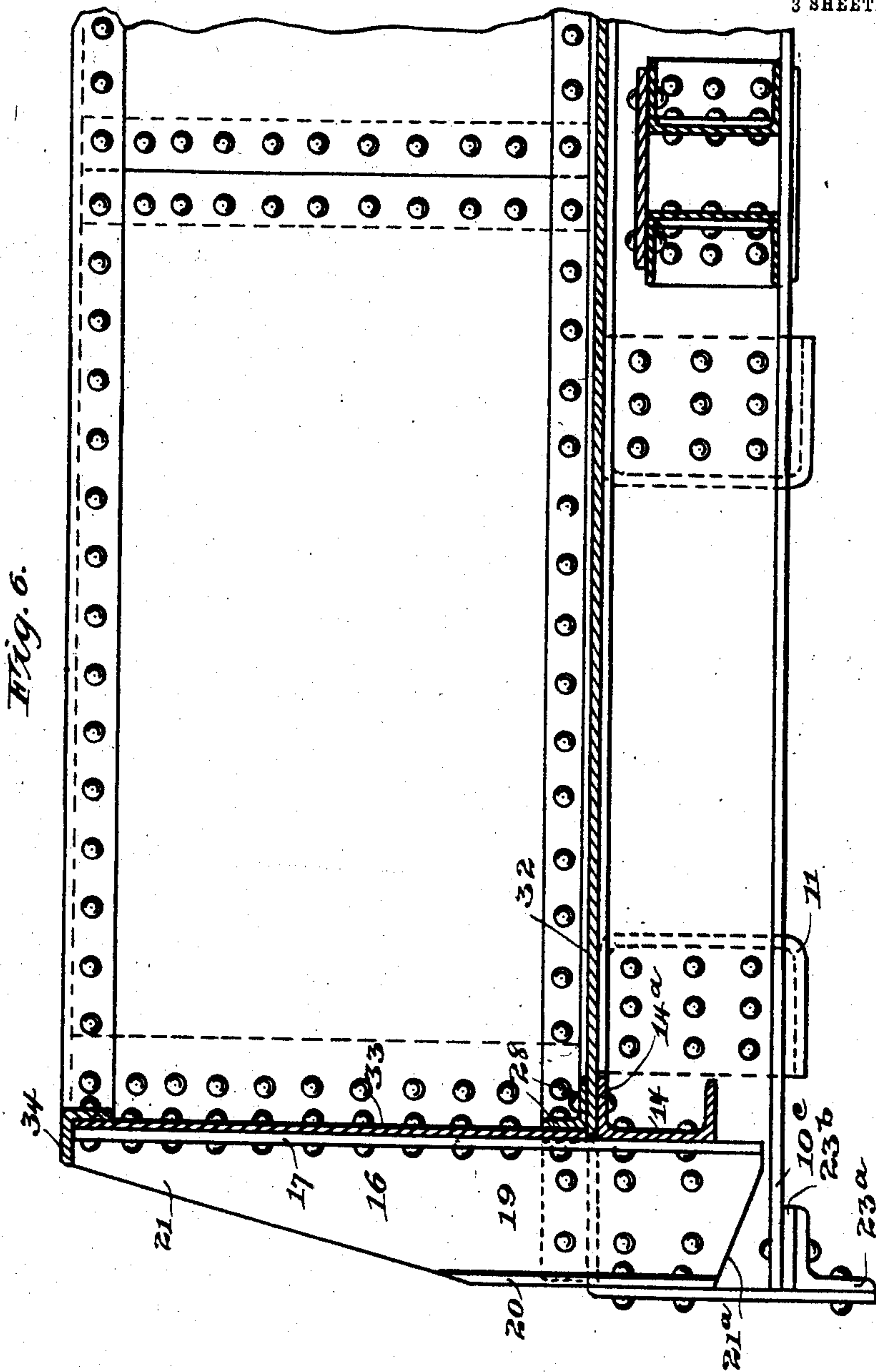
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3 SHEETS—SHEET 3.



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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.

## END CONSTRUCTION FOR CARS.

No. 840,829.

Specification of Letters Patent.

Patented Jan. 8, 1907.

Application filed September 7, 1905. Serial No. 277,431.

*To all whom it may concern:*

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

My invention relates particularly to metallic end stakes for railway-cars and their means of attachment to the underframe of the car; but it also includes improvements in portions of the underframe itself. The stakes each have an inner and an outer flange connected by a web, the inner flange being riveted to the end sill and preferably to a transverse angle-bar above it, the web being secured to the web of the draft or center sill and to an ear of a buffer or face plate, the outer flange being fastened to the main portion of the buffer-plate. By such a construction the parts are firmly bound together, the lower end of the stake being particularly well anchored.

I have illustrated two embodiments of my invention in the accompanying drawings, wherein like reference characters refer to the same parts throughout.

Figure 1 is an end view of a combination wooden and metal gondola car embodying my invention. Fig. 2 is an enlarged elevation of a portion of the end of the car, the buffer or face plate being removed to more clearly show the details of the structure. Fig. 3 is a horizontal section of a portion of the car-frame on line 3-3 of Fig. 1. Fig. 4 is a perspective view of the buffer or face plate. Fig. 5 is a plan view of the car-underframe, and Fig. 6 is a vertical longitudinal section of a metallic car embodying my invention.

The spaced channel-beams 10 10, which may be either the center or draft sills of the car, have attached to their inner surfaces draft-lugs 11 11, fillet-plates 12 being interposed between the lugs and the webs 10<sup>a</sup> of the sills. The top flanges 10<sup>b</sup> of these sills are near their ends cut away on transverse lines 13 to provide for the passage of the end stakes described below, while the channel end sills 14 have their upper flanges 14<sup>a</sup> cut away on transverse lines 15 to provide spaces for the flanges 10<sup>b</sup>. For end stakes I employ structures 16, (shown most

clearly in Figs. 1, 2, and 6,) each of which includes a normal flange 17, to which the car end planks 18 and coping angle-bar 18<sup>a</sup> are bolted or otherwise secured; a web 19, which is riveted to the outer surface or side face of web 10<sup>a</sup>, and an outer flange 20, which is shorter than and parallel to flange 17 and which is tapered toward the web in both directions, as shown in Figs. 1 and 2. The portions 21 and 21<sup>a</sup> of each stake, which comprise prolongations of web 19 beyond flange 20, are tapered toward the normal flange 17 at the ends of the stake, as is clearly illustrated in Fig. 6. Face or buffer plate 22, Fig. 4, comprises a main flat vertical portion 23, provided with a rectangular recess 24 for the passage of the coupler-shank and a flat horizontal portion 25 having upstanding flanges 26 and 27. A short angle-bar 23<sup>a</sup>, Figs. 1 and 6, is riveted to the depending legs of buffer or face plate 23, tying the same together, the bar being also secured to the lower flanges 10<sup>c</sup> of sills 10, with a wearing-plate 23<sup>b</sup> interposed therebetween. When all the parts are in place, the webs 19 of the end stakes are riveted to the outer surfaces of the webs 10<sup>a</sup> of channels 10 and to the up-right flanges 26 of the buffer or face plate. The inner normal flanges 17 are riveted to the outer surfaces of webs 14<sup>b</sup> of channel end sills 14 and to the transverse angle-bar 28, which is fastened to the upper flanges 14 of the end sills, and the outer tapering flanges 20 are riveted to the ends of the main plate portion 23 of the buffer-plate.

It should be noted that the tops of the flanges 10<sup>b</sup> and 14<sup>a</sup> are in the same horizontal plane, the end portions of end-sill webs 14<sup>b</sup> fitting in the spaces between the ends of flanges 10<sup>b</sup> and the surfaces of flanges 17. A coping angle-bar 18<sup>a</sup> is supplied at the top edge of each end of the car, being bolted or otherwise fastened to the upper end plank and to the inner flanges of the end stakes.

In the underframe illustrated in Fig. 5 I have shown wooden longitudinal beams 29 bolted to the angles 28 and resting upon and bolted to body-bolsters 30 and cross-bearers 31, the floor-planks of the car being attached to beams 29. Although I have shown the center sills 10 in Fig. 5 extending beyond the end of the car, it will be apparent that such construction may represent either integral extensions of the center sills or draft-sills se-



cured to said center sills, the end stakes being fastened to their webs.

In Fig. 6 I have shown a slight modification involving a car with a metal body. In this construction the floor-plates 32 are riveted between the top flanges 14<sup>a</sup> of the channel end sills and the lower flange of angle-bar 28, the inner flanges of the stakes being riveted to the end plates 33, as is clearly shown. A coping angle-iron 34 is fastened to end plates 33 and to the inner flanges of end stake 16, its horizontal flange overlapping the upper ends of the end stakes. Otherwise the construction is substantially the same as that described above in connection with Figs. 1 to 5, inclusive.

Minor mechanical changes may be made in this construction without departing from the principle or substance of my invention as defined in the appended claims.

I claim—

1. A car-stake having a web with flanges of unequal length on its opposite edges, one of said flanges being tapered, substantially as described.

2. A car-stake having two flanges of unequal length and a web connecting said flanges, said web being prolonged and tapered beyond an end of the shorter flange, substantially as described.

3. A car-stake having two flanges of unequal length and a web connecting said flanges, said web being prolonged and tapered beyond both ends of the shorter flange, substantially as described.

4. A car-stake having two parallel flanges of unequal length, one of the same being tapered, and a web connecting said flanges, said web being prolonged and tapered beyond an end of the shorter flange, substantially as described.

5. In a railway-car, the combination of a longitudinal sill having a web, an end stake having a web and inner and outer flanges, an end sill, and a buffer or face plate, the inner flange of said end stake being secured to said end sill, the outer flange of said end stake being secured to said buffer or face plate, and the web of said end stake being secured to the web of said longitudinal sill, substantially as described.

6. In a railway-car, the combination of a longitudinal sill having a flange at its upper edge, said flange being cut away for a portion

of the length of the sill inwardly from the end thereof, an end stake having a web and an inner and outer flange, an end sill, and a buffer or face plate, the inner flange of said end stake being secured to said end sill, the outer flange of said end stake being secured to said buffer or face plate, and the web of said end stake being secured to the side of said longitudinal sill and that portion of the same where the upper flange is cut away, substantially as described.

7. In a railway-car, the combination of a longitudinal sill having a vertical portion, an end stake having a web and an inner and outer flange, an end sill, a transverse angle-bar, and a buffer or face plate, the inner flange of said end stake being secured to said end sill and transverse angle-bar, the outer flange of said stake being secured to said buffer or face plate, and the web of said end stake being secured to said vertical portion of the longitudinal sill, substantially as described.

8. In a railway-car, the combination of a longitudinal sill having a vertical portion, an end stake having a web and an inner and outer flange, an end sill, and a buffer or face plate having an upturned flange, the inner flange of said end stake being secured to said end sill, the outer flange of said end stake being secured to said buffer or face plate, and the web of said end stake being secured to said vertical portion of the longitudinal sill and to said flange of the buffer or face plate, substantially as described.

9. In a railway-car, the combination of a longitudinal sill projecting beyond the end of the car-body, and having a vertical portion, a channel end stake, an end sill, a transverse angle-bar riveted to said end sill, and a buffer or face plate having an upstanding flange, the inner flange of said end stake being secured to said end sill and to said transverse angle-bar, the outer flange of said end stake being secured to said buffer or face plate, and the web of said end stake being secured to said vertical portion of the longitudinal sill and to said upstanding flange of the buffer or face plate, substantially as described.

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