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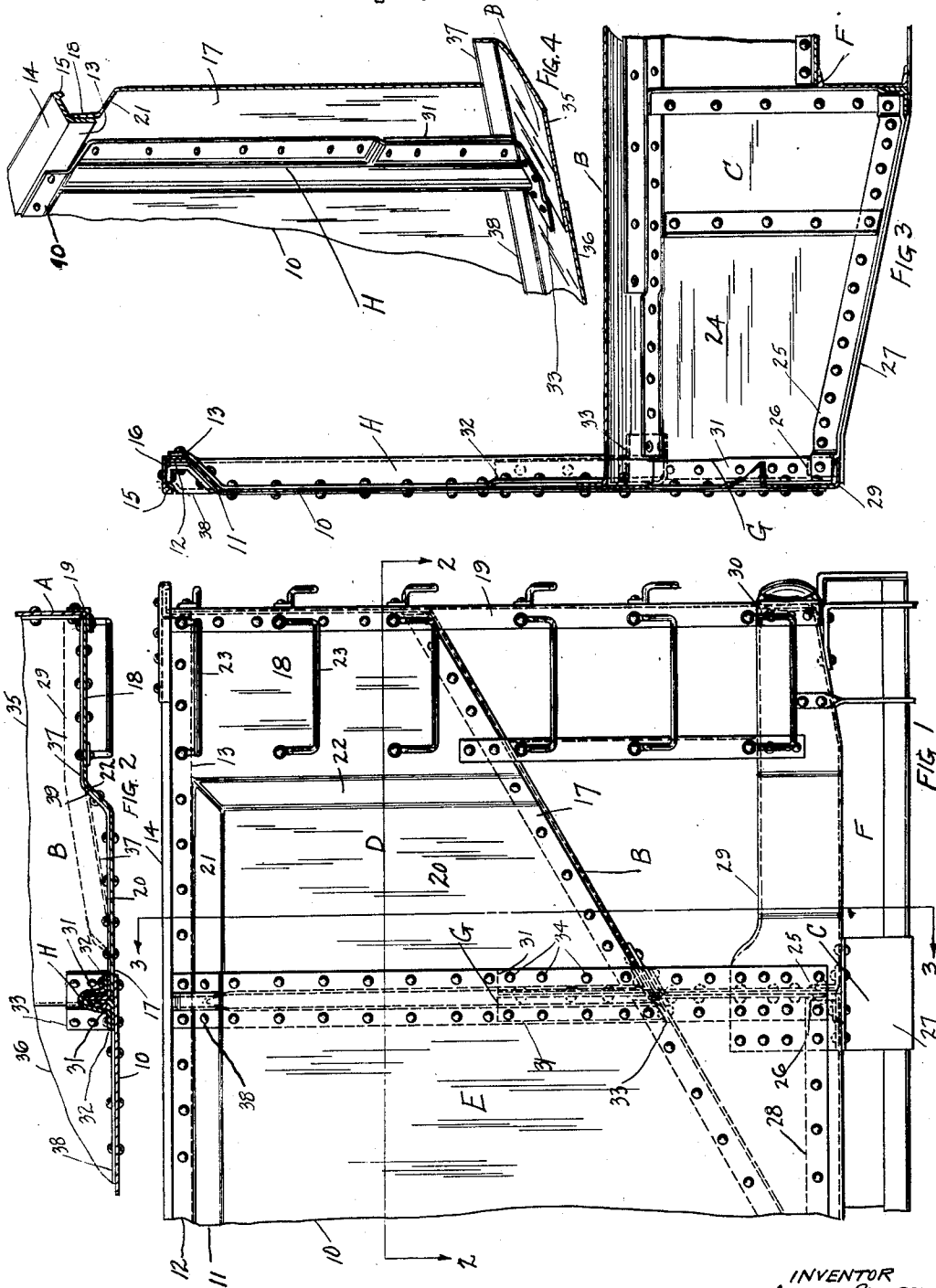
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A. CAMPBELL

RAILWAY CAR CONSTRUCTION

Original Filed May 24, 1923

2 Sheets-Sheet 1



INVENTOR
ARGYLE CAMPBELL
BY
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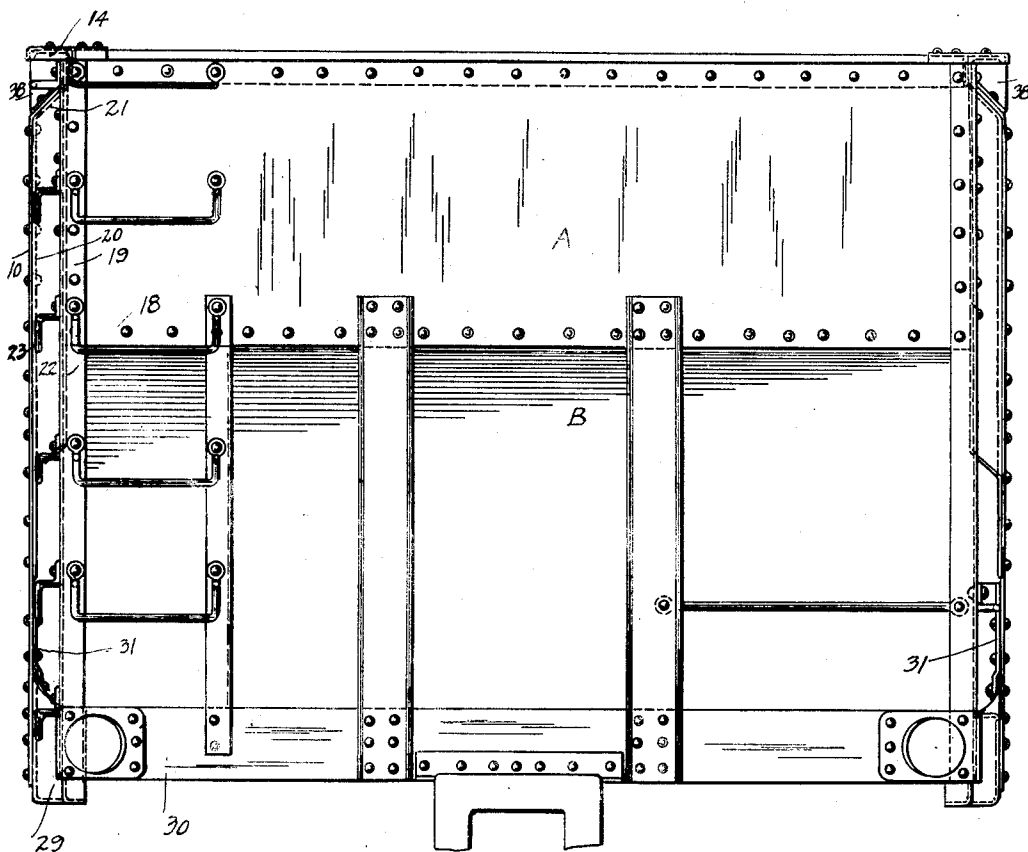


FIG. 5

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UNITED STATES PATENT OFFICE.

ARGYLE CAMPBELL, OF CHICAGO, ILLINOIS, ASSIGNOR TO ENTERPRISE RAILWAY EQUIPMENT COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS,

RAILWAY-CAR CONSTRUCTION.

Application filed May 24, 1923, Serial No. 641,121. Renewed January 31, 1925.

To all whom it may concern:

Be it known that I, ARGYLE CAMPBELL, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Railway-Car Constructions, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

This invention relates to improvements in railway car construction.

One object of my invention is to provide a car of the dumping type having the maximum over-all width possible under given road clearance and the maximum length of the car consistent with the application, to the outer side of the car, of the usual safety appliances required by law to the end that the maximum possible capacity is obtained for a car having a maximum possible width and given height.

Another object of the invention is to provide an improved and simple connection between the bolster and sides of the car.

My invention further resides in certain details of construction as will more clearly appear from the description and claims hereinafter following.

In the drawings forming a part of this specification, Figure 1 is a broken side elevational view of part of a hopper car, showing one end of the same and illustrating the improved construction from the end of the car to a point inwardly of the bolster. Figure 2 is a horizontal longitudinal sectional view, broken away, corresponding substantially to the section line 2—2 of Fig. 1. Figure 3 is a transverse sectional view taken through the car and illustrating substantially one-half thereof, said section corresponding substantially to the section line 3—3 of Fig. 1. Figure 4 is a fragmentary perspective view of a portion of the car as viewed from the interior thereof and illustrating the bolster stake. Figure 5 is an end elevational view of the car as shown in Fig. 1.

My improved construction is shown, by way of illustration, as applied to a hopper car, and in said drawings, A denotes, broadly, the end wall of the car; B the sloping end bottom wall; C the body bolster; D the portion of the side wall extending

from the body bolster to the end of the car; E the portion of the side wall intermediate the bolsters; F the longitudinal center sills; G the body bolster stub stakes; and H the hollow bolster stake. While I have shown only one end of the car it will be understood that the two ends of the car are of substantially the same construction.

My present invention consists more particularly in the superstructure of the car and is particularly applicable to cars of the type shown in my pending application, Serial No. 585,432, filed April 4th, 1923, and of which this application is a continuation in part. The portions E of the side walls of the car intermediate the body bolsters, are spaced apart the maximum permissible distance allowed in service and, preferably, each consists of sheet metal plates 10, preferably inclined upwardly and inwardly near the tops thereof as shown at 11 and thence upwardly as shown at 12 and there secured to the vertical flange 13 of a longitudinally extending top rail member 14. The latter preferably consists of a bulb angle disposed with the bulb 15 thereof on the outstanding edge of the flange 16 which is so disposed as to be in a horizontal plane.

Each end portion or sheet D of each side wall consists of a sheet metal plate 17 having the major or main section 20 thereof, extending in the same plane as the plane of the intermediate portion E of the side wall. The sheet 17, near the extreme end of the car is offset inwardly to provide the offset section 18 for the purpose of accommodating the usual ladder rungs 23 within the permissible overall width of the car. The inwardly offset section 18 is secured along its top edge to the top rail member 14, the sheet being also indented along its upper edge above the main section 20 to the same plane as the section 18, as clearly shown in Figs. 1 and 3. The inclined sections between the main outermost section 20 and the inwardly offset upper edge is indicated at 21, and 22 indicates the offset between the main section 20 and section 18, the former offset extending horizontally and the latter vertically. It will also be noted that the vertical edge of the section 18 is connected to the corner post angle 19. Connection between the sheet 17 and the adjacent plate 10 is effected by extending

the vertical edge of the latter beyond the bolster to overlie the plate 17 and to which it is riveted.

Extending transversely of the car beneath each sloping end floor is the body bolster C which, preferably, includes a web plate 24 extending across the plane of the center sill F and bent near the top thereof and secured to the sloping end floor B. The bottom chord of the bolster consists of bottom angles 25 and 26, disposed on opposite sides of the center sills, and bottom cover plate 27 extending from side to side of the car, said bottom plate being secured to side wall bottom angle 28 and to the brace 29 which extends from the bolster to the end sill 30, of the car.

The principal means of connection between the bolster and the side wall of the car consist of stub stakes G formed of angles 31—31 secured to either side of the bolster web plate 24 and extended upwardly through the sloping floor of the car for a limited distance and terminating an appreciable distance below the top of the car. Said portion of the stub stakes projecting into the car is contained within the hollow stake H which is preferably formed of sheet metal pressed to a U shape with flanges 32—32 to either side of the U whereby connection is made between the stake and the side of the car, the said stake extending from the sloping floor of the car to the top rail bulb member and suitably secured thereto by offset flange as indicated at 40 in Fig. 4. The lower portion of the stake H is bent at an angle at 33 to form a knee joint and conform to the sloping floor and secured thereto, thus covering the perforation made in the sloping floor for the stub stakes to pass therethrough. Furthermore, the knee joint in the stake forms a secured footing for the stake which insures a very rigid construction for the side and effectively braces the same against inward bending when the car is unloaded by tipping the same on its side in a dumping machine. Stake H and the stub stakes overlap and extend co-extensively with each other for a limited distance, the rivets 34 passing through both stakes. Consequently, the weakness which would ordinarily be present in a stake made of a plurality of sections is entirely compensated for.

The sloping floor B is preferably made in sections, consisting of upper section 35 and lower section 36 and these sections overlap and are jointed over the bolster as shown in Fig. 4, the sloping floor sections of the car being respectively flanged upwardly along their edges at 37 and 38 and riveted to the side walls of the car. Upper section 35 is formed with an offset at 39 (see Fig. 2) to conform to the offset section of the end portion of the side wall. The knee

bracket portion 33 of the stake H also extends over the overlapping portion of the floor plates 35 and 36 thereby obviating the necessity of forming a complicated connection between the side wall of the car and the said overlapping plates where the stub stakes 31 intersect the same.

The brace 29 is extended to the end of the car and is there connected directly to the end sill 30 and to the corner post angle 19, the said brace 29 being offset as indicated at 37 for the purpose of providing the necessary clearance for the lower rungs of the side ladder.

The corner posts 19 rise vertically from the end sills and are preferably straight, defining the limits of the side and end walls of the car.

Brackets 38 are disposed at intervals along the side of the car and assist to brace the top rail member and prevent the same from bending to the side. Each bracket 38 is preferably disposed adjacent a side stake and connected thereto.

From the preceding description considered in connection with the drawing, it will be noted that the planes of the portions E of each side wall are continued beyond the vertical line of the bolster to a point closely adjacent the ladder rungs so that the maximum capacity is made available for the car within the permissible limits of road clearance. Stated in another manner, the only loss in capacity over a car having the side wall continued literally from end corner post to end corner post, all in the outside plane of the side portions E, is that resulting from the inwardly offsetting of the sections 18 and as to these, it will be noted that, on account of the sloping end hopper sheets and general conformation of the car, the indented portions are of the minimum vertical height.

I have shown and described my improved invention in connection with a hopper car but it will be understood that the same is not limited thereto.

I claim:—

1. In a dump car having a sloping floor, the combination with a side wall; of a body bolster extending transversely of the car beneath the sloping floor; and a plurality of angles arranged in pairs at each end of the bolster, said angles intersecting the sloping floor, each angle of each of said pairs having one of its flanges inwardly disposed and secured to the bolster, the remaining flanges of each pair of angles being disposed in substantial alinement, in the plane of the side wall of the car and secured thereto.

2. In a dump car having a sloping end floor, the combination with a side wall; of a body bolster extending transversely of the car beneath the sloping end floor; of a stake secured to the body bolster and extending

through the sloping end floor and secured to the car side wall; and a second stake disposed entirely above the sloping floor and secured to the upper portion of said first named stake and to the side wall.

3. In a dump car having a sloping end floor, the combination with a side wall; of a body bolster extending transversely of the car beneath the sloping end floor; of a stub stake secured to the body bolster and passing through the sloping end floor and extending above the same for a limited distance and secured to the side wall; and another stake disposed above the sloping floor and secured to the aforesaid stub stake and extending upwardly above the same and secured to the side wall.

4. In a dump car, the combination with a side wall; of a hollow stake secured thereto; and a stake extending within said hollow stake and secured thereto.

5. In a dump car having a sloping end floor and a side wall having the upper margin thereof reinforced by a top rail member, the combination with a hollow stake disposed above the sloping floor and secured thereto and to the top rail member, of a stake extending through the sloping end floor and within the aforesaid hollow stake.

6. In a dump car having a sloping end floor and a body bolster, the combination with a side wall including a side top rail member and a plate inclined downwardly and outwardly from the top rail member in order to provide a car of increased width; of a hollow stake disposed above the sloping end floor of the car and secured thereto and to the top rail member; and a stake secured to the body bolster and extending through the sloping end floor and within the aforesaid hollow stake.

7. In a dump car having a sloping end floor, the combination with a car side wall, of a stake secured to the inner face of the side wall and a knee joint between said stake and sloping end floor.

8. In a dump car, the combination with a side wall and a body bolster extending transversely of the car; of a sloping end floor secured to the side wall of the car and formed of a plurality of sections joined at the bolster and overlapping; a stake rising from the end of the bolster through the said sloping floor; and a covering for the said stake secured to the side wall of the car and the sloping floor.

9. In a dump car, the combination with the end wall; of a side wall having the top thereof reinforced with a longitudinally extending member of angular section having one flange thereof substantially horizontally disposed and the adjacent flange thereto vertically disposed; a corner post defining the limits of the aforesaid respective side and end walls; a plate included in the side wall of the car and having a section secured to the aforesaid top member and corner post and extending from one to the other in the same plane; and ladder rungs secured to the aforesaid section, said plate having the main section thereof offset adjacent the ladder rungs and adjacent the side top member thereby presenting a car of increased width throughout the length of the latter offset.

In witness that I claim the foregoing I have hereunto subscribed my name May, 1923.

ARGYLE CAMPBELL.

Witnesses:

GEO. B. DOREY,
I. E. DRAKE.