Oct. 23, 1928.

1,688,685

A. CAMPBELL

RAILWAY CAR

Filed July 11, 1927

2 Sheets-Sheet 1

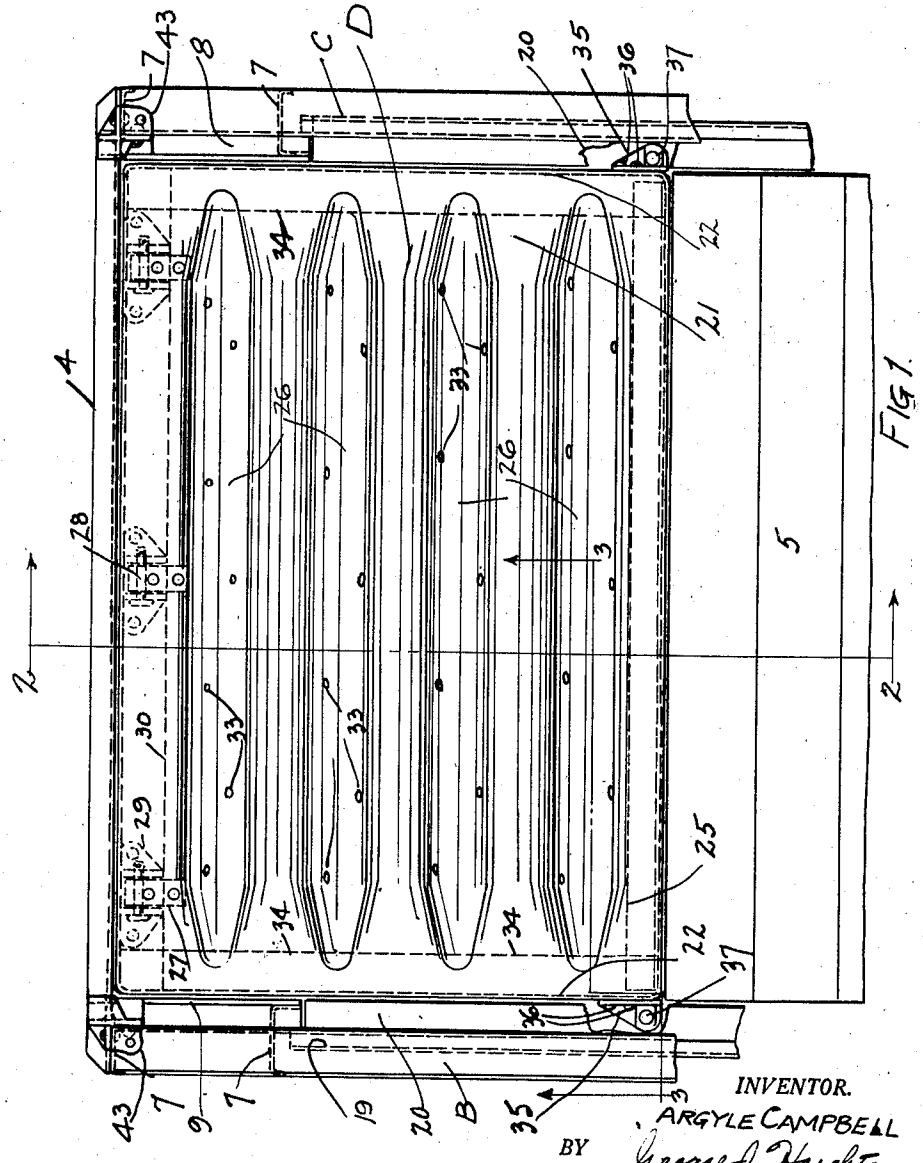


FIG 1.

INVENTOR.
ARGYLE CAMPBELL
BY George A. Wright
HIS ATTORNEYS.

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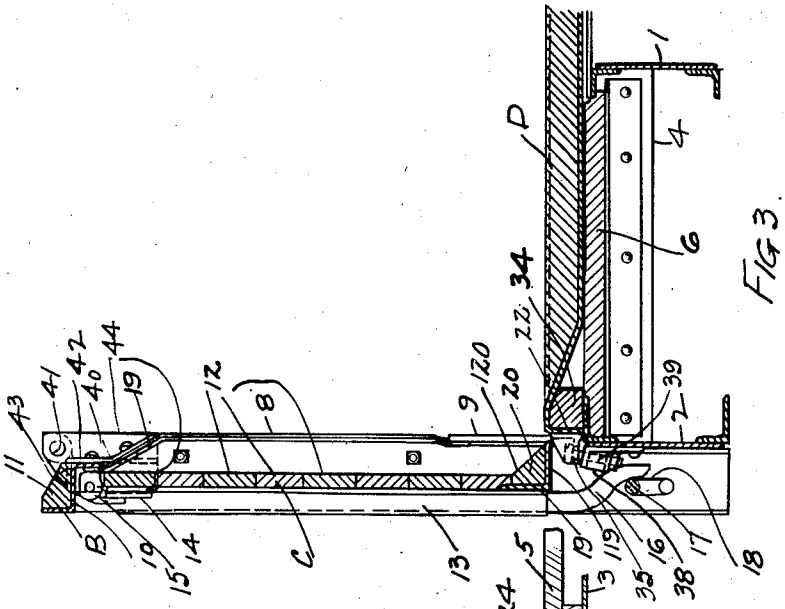


FIG 3.

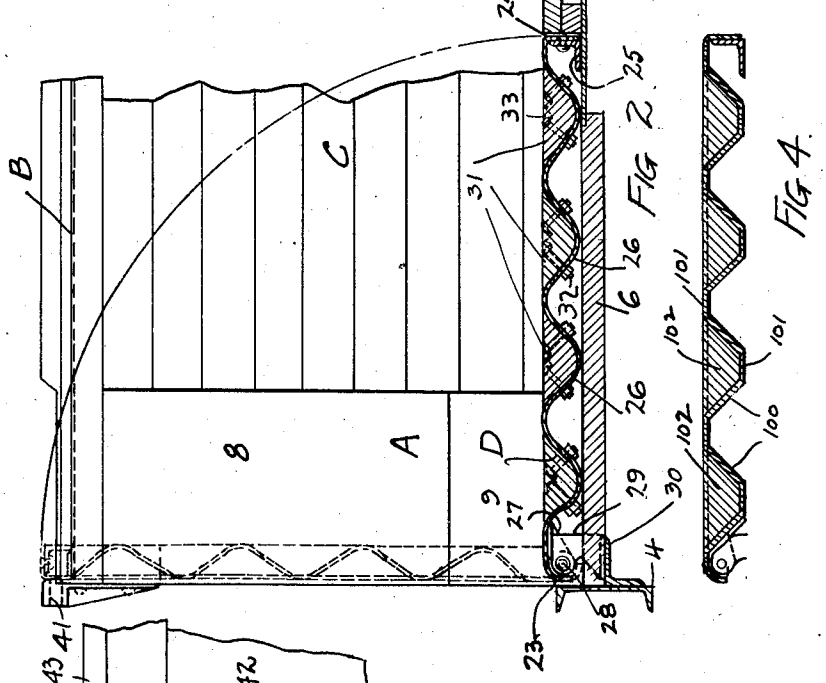


FIG 2.

FIG 4.

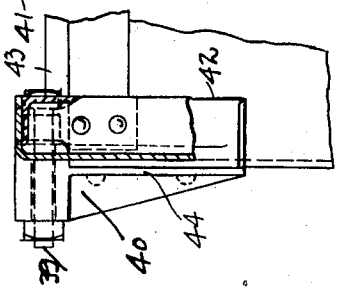


FIG 5.

INVENTOR.
ARGYLE CAMPBELL
BY George S. Wright
HIS ATTORNEYS.

Patented Oct. 23, 1928. 1,688,685

UNITED STATES PATENT OFFICE.

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

RAILWAY CAR.

Application filed July 11, 1927. Serial No. 204,678.

My invention relates to railway cars and the like and particularly to a type of car having vertical stakes, swinging side doors, and movable ends whereby the car may be utilized as an open end car and unloaded to the side or sides of the track by having an unloading plow passed therethrough, or readily converted from an open end to a closed end car suitable for carrying coal, stone, gravel or other commodities usually handled in open top gondola cars.

One object of my invention is to provide an improved end and floor construction whereby a member may be positioned to form the end wall of the car or form a portion of the level floor of the car.

Another object of my invention is to provide a car member with rigidifying corrugations pressed out of the main portions of the plates and dispose filling members within said corrugations, so that said fillers will restore continuity of flush surface to the plate.

Further objects and advantages of my invention will be apparent from the drawings, specification and claims appended hereto.

For further comprehension of my invention, reference must be had to the accompanying drawings wherein Fig. 1 is a top plan view of the end portion of a car showing my improved construction embodied therein, a portion of the side doors being cut away to better show the locking brackets on the end wall member. Figure 2 is a longitudinal, vertical, sectional view of that part of the end of the car showing my improvements, said view being taken on a line corresponding to line 2—2 of Figure 1. Figure 3 is a transverse, vertical, sectional view of approximately one-half of the car taken on a line corresponding substantially to line 3—3 of Figure 1. Figure 4 is a sectional view of a modified end member illustrating a modified form of corrugation which may be substituted for the type of corrugation shown in Figures 1 and 2. Figure 5 is a fractional view of the upper left hand corner of the car as viewed in Figure 2 but showing the end member in full lines and in locked relation with the car structure.

In said drawings, 1 indicates a portion of the center sill of the car, 2 one of the side sills, 3 a portion of one of the body bolsters, 4 one of the end sills, 5 a portion of the main floor of the car, and 6 a sub-floor section extending from the center sill to the side sill and from the end sill to the body bolster, said sub-floor being disposed at a lower level than the main floor for the purpose hereinafter pointed out. Only one end of the car is shown herein but it will be understood that the construction may be duplicated at each end of the car.

The superstructure of the car broadly includes side stakes A, top rail member B, side doors C, and a convertible end member D which may be positioned either as the end wall of the car or to form a portion of the floor of the car. While I have shown only one end of the car in Figure 1 and approximately only one-half the width of the car in Figure 3 it will be understood that the sides of the car are each formed of a plurality of side stakes, spaced apart from each other an appreciable distance, said stakes being secured to the side sills at their lower ends and connected to the top rail member at their upper ends. The side doors are disposed intermediate the side stakes and hinged to the top rail member.

The corner stakes A shown on the drawing each are of somewhat greater width than the intermediate stakes in view of the fact that ladders are applied on said corner stakes. Said corner stakes A are each formed of a plurality of pan-shaped pressed members 7—7 connected by an intervening flat plate 8, and a relatively heavy plate 9, the latter also constituting a plow guide adapted to take the wear and impact of the plow as it is passed through the car. Said plow guides are usually disposed on all the stakes in the car and it is usual to space the stakes to provide approximately 8′ 8″ between the plow guides. Inasmuch as the overall allowable width of cars may be extended to 10′ 2½″, it will be apparent that the cars may be made considerably wider without exceeding the clearance limits, but as the unloading plows have been standardized for the 8′ 8″ clearance, it is desirable to maintain said clearance. The attainment of additional carrying capacity while maintaining the standardized width between plow guides is very desirable and I therefore space the side doors outwardly of the plow guides for the purpose of securing increased width between the side walls. The stakes are flared upwardly and

outwardly as indicated at 19 and the side top rail B, which preferably consists of a Z-bar 10 and a wooden filler 11, is set outwardly of the lower portion of the stake and of the plow guides thereby providing a car of increased width at the top thereof.

Each side door C preferably consists of a series of planks 12 joined by a series of battens 13, the latter being provided, adjacent their upper ends, with straps 14 whereby the door is pivotally mounted from hinge brackets 15 carried by the side top rail B. Adjacent their lower ends, the side doors are provided with extensions 16 with which an operating shaft 17 cooperates to maintain the doors in closed position, said shafts 17 being mounted to have movement in elongated slots 18 formed in the side stakes. Each side door, adjacent the lower margin thereof, is provided with an angle member 19 which presents a horizontally extending flange 119 on which is mounted a triangular sectioned block 20, said block being formed to present an incline 120 extending at an angle towards the floor of the car.

The end member D preferably includes a body section 21 formed of a metal plate flanged at its longitudinal marginal edges as indicated at 22—22 and also at its hinged and free edges as indicated at 23 and 24. At its outer free edge the member is further reinforced by a supplementary angle 25. Intermediate its ends, the member D is reinforced by having a plurality of embossments preferably in the form of corrugations 26 pressed therein, said corrugations being preferably disposed to extend transversely of the car. At its pivoted end, the member D is provided with hinge brackets 27 whereby it is pivotally hinged on pivots 28 to hinge butts 29, the latter being preferably carried on an angle 30 which also forms a support for the sub-floor 6. The end member D has the pivoted edge 23 formed concentrically with the pivotal center of pivot 28 thereby providing a rounded edge over which the unloading plow is guided from car to car. Filler blocks 31, preferably formed of wood, may be disposed in the corrugations 26 for the purpose of providing a flush floor over which the plow will ride without interference. Said filler blocks are preferably bolted as indicated at 32, holes being provided for the bolts as indicated at 33. Extending longitudinally of the member D along the flanges 22—22 are blocks 34—34 which serve to brace the member in a direction transversely of the corrugations.

Adjacent the free edge of the member D there are provided brackets 35—35 which are riveted to the respective flanges 22—22 as indicated at 36, said brackets extending outwardly beyond the edges of the side floor of the car and beyond the side sill 2, the extensions being provided with perforations 37. Said perforations 37, when the member D is positioned as a portion of the floor, are adapted to register with perforations formed in brackets 38, the latter being rigidly secured to the side sills 2. Said brackets 35 and 38 are bolted together by bolt as indicated at 39. When it is desired to convert the car from an open end car to a closed end gondola, the bolts 39 are removed, the side doors opened slightly, and the member D lifted, swinging about its pivots 28 until a vertical position is assumed. The offset top construction, as defined by the upwardly and outwardly sloping corner stakes, permits the brackets 35 to clear the corner stakes A in shifting from one position to the other. With the member D in vertical position as indicated by dotted lines in Figure 2, each bracket 35 engages with a fixed bracket 40 mounted on the upper end of the corner stake and the end of the top rail. Said bracket 40 is provided with a perforation 41 adapted to register with perforation 37 formed in bracket 35 and the bolt 39 is then adapted to extend through the respective perforations as indicated in Figure 5. Each bracket 40 is formed with flanges extending longitudinally and transversely of the car as indicated at 42, 43 and 44 respectively. The brackets 40 thus present abutments to engage with the brackets 35 on the member D for the purpose of maintaining the latter against outward movement when in vertical position.

In the alternate construction shown in Figure 4, the corrugations are of trough shape with sloping flat walls 100 and connecting flat portions 101 while the fillers 102 are shaped to conform to the shape of the corrugation.

I have herein shown and described what I now consider the preferred manner of carrying out my invention, but the same is merely illustrative and I contemplate all changes and modifications that come within the scope of the claims appended hereto.

I claim:—

1. In a railway car, the combination of a member pivoted adjacent the end of the car, said member being adapted to form, in one position, a vertical end wall of the car and, in another position, a portion of the level floor of the car; and a sub-floor adjacent said member whereby a depressed floor portion is presented when the movable member is positioned as the end wall of the car.

2. In a railway car, the combination with a main floor section; a sub-floor disposed at a lower level than the said main floor adjacent the end of the car providing a pocket; and a pivotally mounted member adapted to be positioned above the said sub-floor to form a continuation of the main floor, said member being swingable to a vertical position to form the end wall of the car.

3. In a railway car, a movable member adapted to form, in one position, the end wall

of the car and, in another position, a portion of the level floor of the car, said member having reinforcing corrugations formed therein.

4. In a railway car, a movable member adapted to form, in one position, the end wall of the car and, in another position, a portion of the level floor of the car, said member having reinforcing corrugations formed therein, said corrugations presenting an irregular contour; and fillers disposed in the corrugations for the purpose of presenting a flush surface on one side of the member.

5. In a railway car, a member adapted to form, in one position, the end wall of a car and, in another position, a portion of the level floor of a car, said member having marginal flanges and reinforcing corrugations therein extending transversely of the car; and fillers extending at an angle to said corrugations, said fillers being disposed adjacent the side edges of the member whereby said fillers extend longitudinally of the car when the member is positioned to form a portion of the floor and extend vertically when said member is positioned as the end wall of the car.

6. In a railway car, the combination with side stakes on the opposite sides of the car; of side doors having their inner faces spaced away from said side stakes; a floor extending between the side stakes; and an incline formed on the door extending upwardly and outwardly from the junction of the floor and the stake for the purpose of bridging, at an incline, the space between the side stakes and the inner face of the side door.

7. In a railway car, the combination with the side stakes; of a floor extending between said stakes; swinging side doors, said doors having their inner faces spaced away from the floor; a bracket extending from each door to meet the floor; and an element carried by each bracket to bridge, at an incline, the space intermediate the inner face of the door and floor of the car.

8. In a railway car, the combination with a movable member adapted to form, in one position, the end wall of the car and, in another position, a portion of the level floor of the car; and devices for locking said member in either of its two positions, said devices comprising a bracket carried by the movable member adjacent its swinging edge and means mounted respectively on the corner stake and side sill of the car, said means being so disposed that the bracket on the movable member may be bolted to either of said means.

9. In a railway car, the combination with a side wall including side stakes and a top rail carried by said stakes, said top rail and the upper portions of said stakes being spaced outwardly beyond the lower portions of the stakes; of a movable member between the said stakes, said member being adapted to form, in one position, the end wall of the car and, in another position, a portion of the floor of a car; and a bracket carried by said movable member, the said bracket being disposed in the plane of the lower portions of said stakes and inwardly of the top rail whereby, as said member is moved from one position to the other, the bracket member will pass above the lower portions of said side stakes.

10. In a railway car, the combination with the side wall including side stakes; and a top rail carried by said stakes, said top rail being spaced outwardly from the inner face of the side stakes; of a movable member extending between the stakes, said member being adapted to be positioned either as the end wall of the car or as a portion of the floor; a bracket carried by said movable member, said bracket being disposed in the plane of the stakes and inwardly of the top rail whereby, as the movable member is moved from one of its positions to the other, the bracket will pass above the stakes; and a second bracket secured to the top rail for engagement with the bracket on the movable member when the latter is positioned as an end wall.

11. In a railway car, the combination with a side sill; of an end sill united to said side sill; a corner stake rising vertically at substantially the junction of said side sill and end sill; a movable member pivoted adjacent the end sill of the car on an axis extending transversely of the car; a bracket carried by the movable member adjacent its swinging edge; and brackets respectively carried by the corner stake and side sill, said brackets being so disposed as to respectively align with the bracket carried by said member when it forms either a portion of the floor of the car or an end wall of the car.

12. In a convertible plow car, the combination with a body having a floor and corner posts; of a displaceable end wall section adapted to assume either a vertical position to form the end wall of the car or a horizontal position to form a portion of the floor, said end wall section being formed of sheet metal having integrally formed strengthening indentations therein and fillers within said indentations on that side of said end section which is presented uppermost when said section is in horizontal position, the floor of the car being recessed to receive said section whereby the upper surface thereof is rendered flush with the remainder of the floor of the car.

13. In a plow car of the character described, the combination with a body having a floor; of side stakes disposed outwardly of said floor; pivoted side doors mounted between said stakes and the major portions of which are disposed an appreciable distance outwardly of the edges of the car floor, said doors

being provided at their lower edges with means adapted to bridge and close the gap between the main portions of said doors and the corresponding adjacent edges of the car floor, when said doors are in closed position.

14. In a car of the character described, the combination with a car body having corner stakes and fixed floor portions; of a displaceable end section pivotally mounted along one edge on an axis extending transversely of the car and at the end thereof; and means for locking the free edge of said section when the latter is in either vertical or horizontal position, said means including devices secured to said section and devices secured respectively to the corner posts and the fixed portions of the car.

15. In a railway car provided with a level floor having a depressed portion adjacent one end thereof; and a movable end wall member adapted in one position to form the vertical end of a gondola car, and in another position to be accommodated within the depressed portion of the floor and form a surface level with the level portion of said floor said member being bodily movable from one position to the other.

In witness that I claim the foregoing I have hereunto subscribed my name this 7th day of July, 1927.

ARGYLE CAMPBELL.