Oct. 6, 1936. G. E. EDMUNDS 2,056,651

MINE CAR

Original Filed March 17, 1932 5 Sheets-Sheet 1

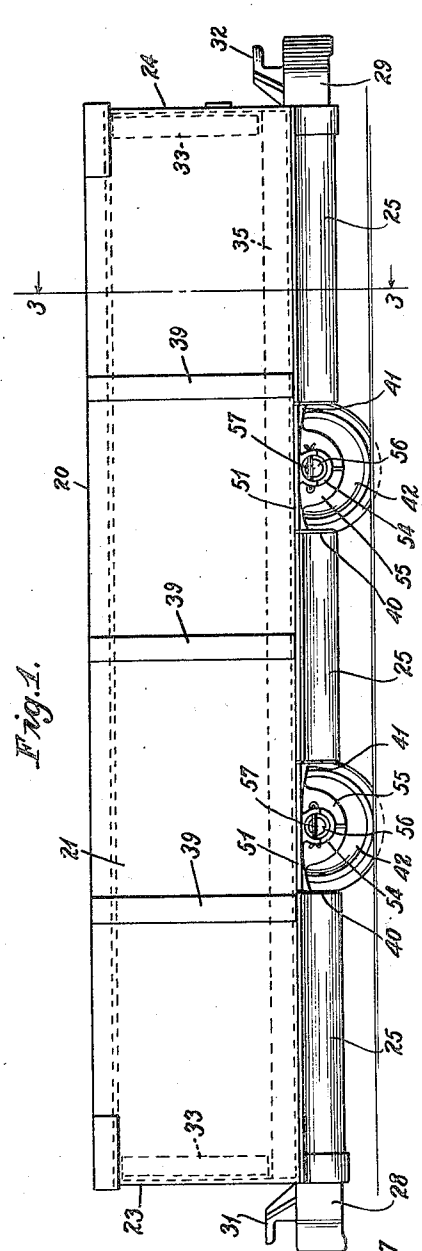


Fig. 1.

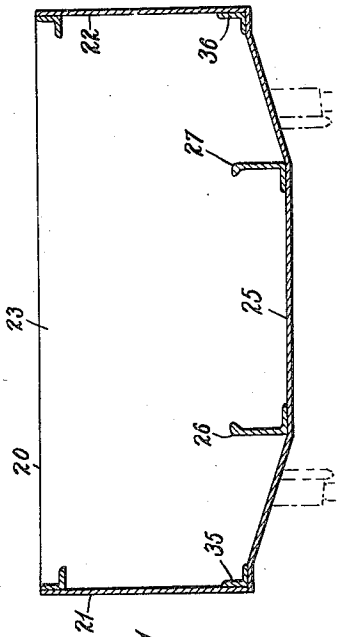


Fig. 3.

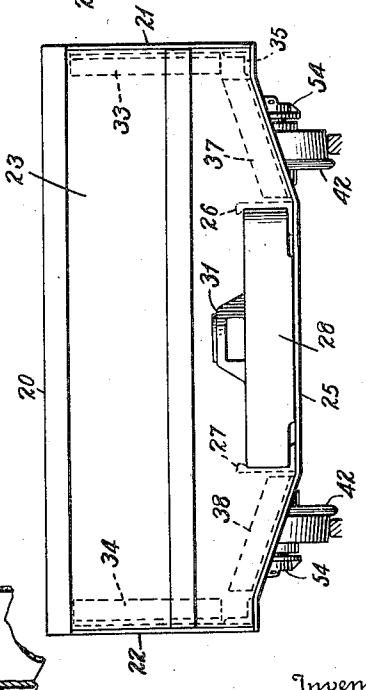


Fig. 2.

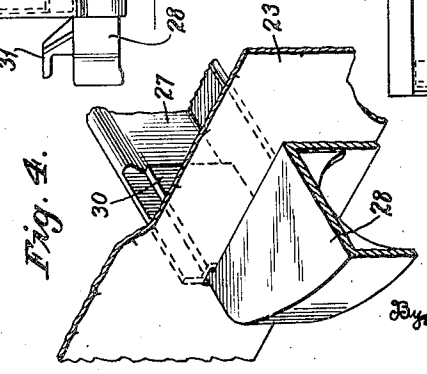


Fig. 4.

Inventor
Glenn E. Edmunds

By Lambuth Lyon & Dalby, Lambuth
Attorneys

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MINE CAR

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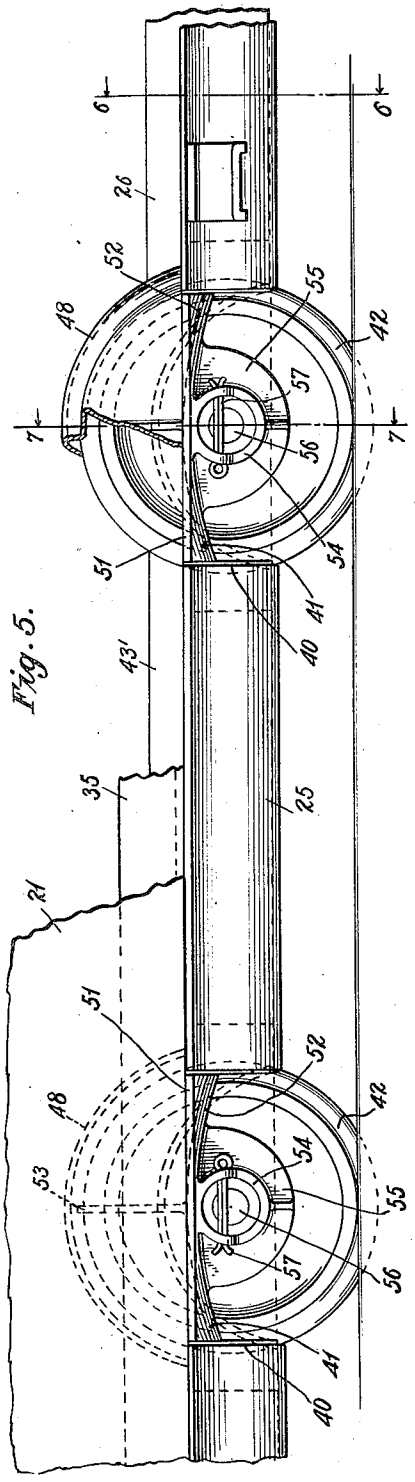


Fig. 5.

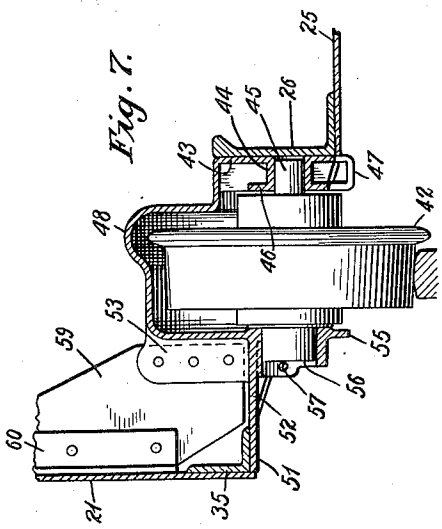


Fig. 7.

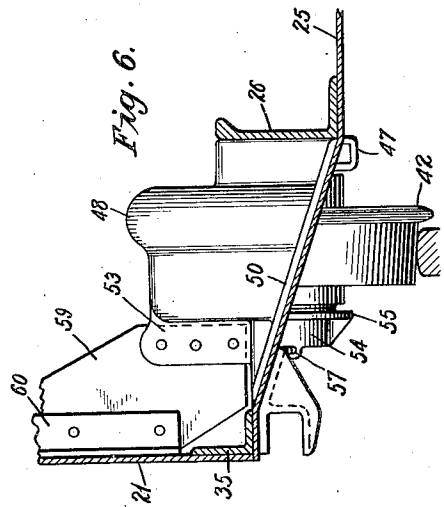


Fig. 6.

Inventor
Glenn E. Edmunds

By Cushman, Darby & Cushman
Attorneys

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Fig. 8.

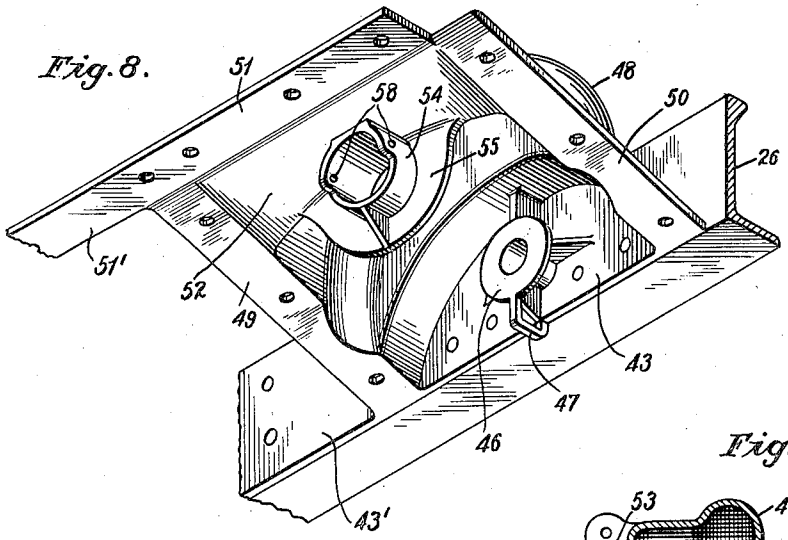
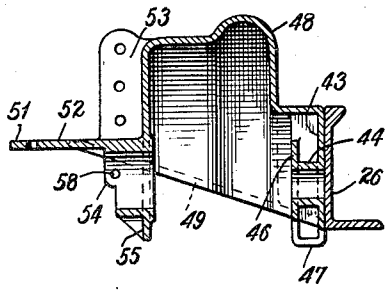


Fig. 10.



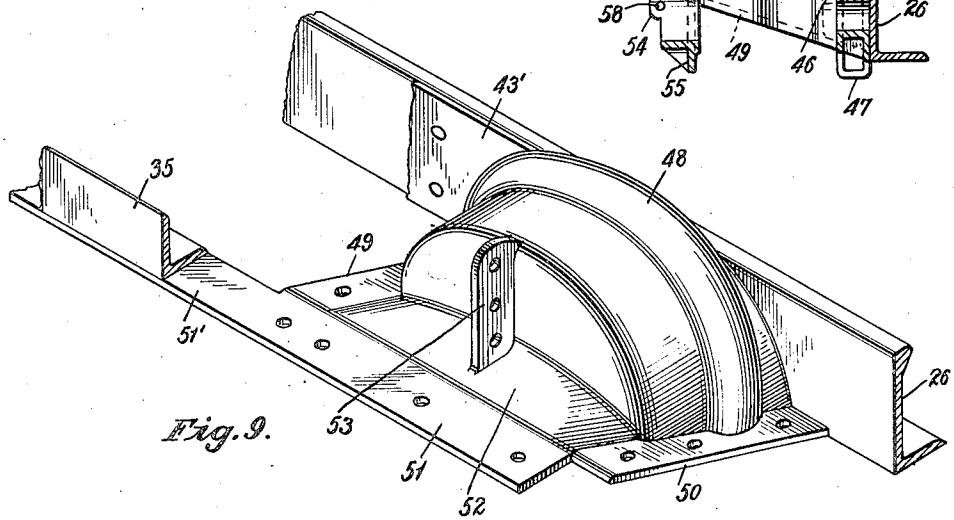


Fig. 9.

Inventor

Glenn E. Edmunds

By Cushman, Darby & Cushman

Attorneys

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Fig. 11.

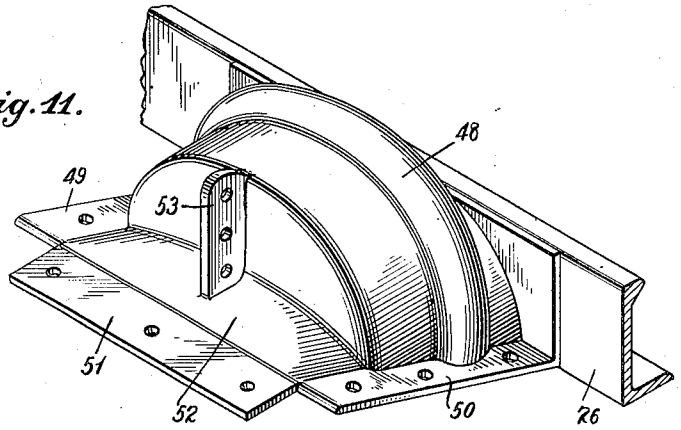


Fig. 12.

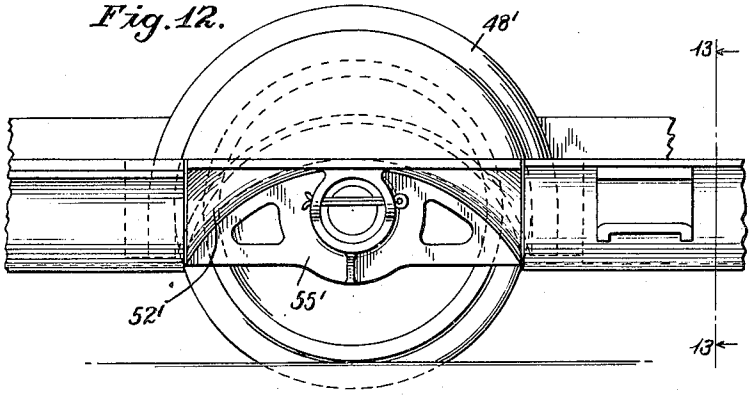


Fig. 13.

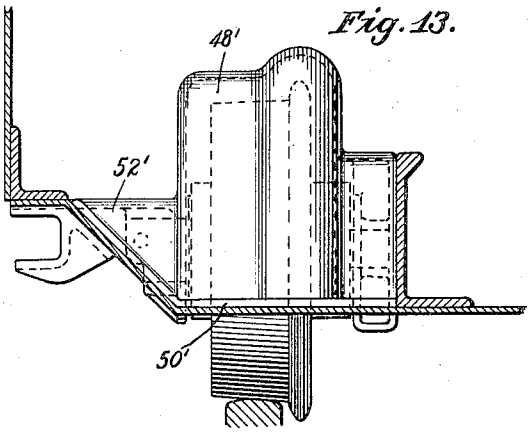
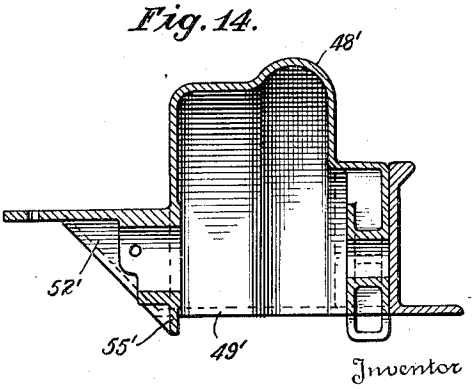


Fig. 14.



Inventor

Glenn E. Edmunds

By Cushman Darby & Cushman

Attorneys

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MINE CAR

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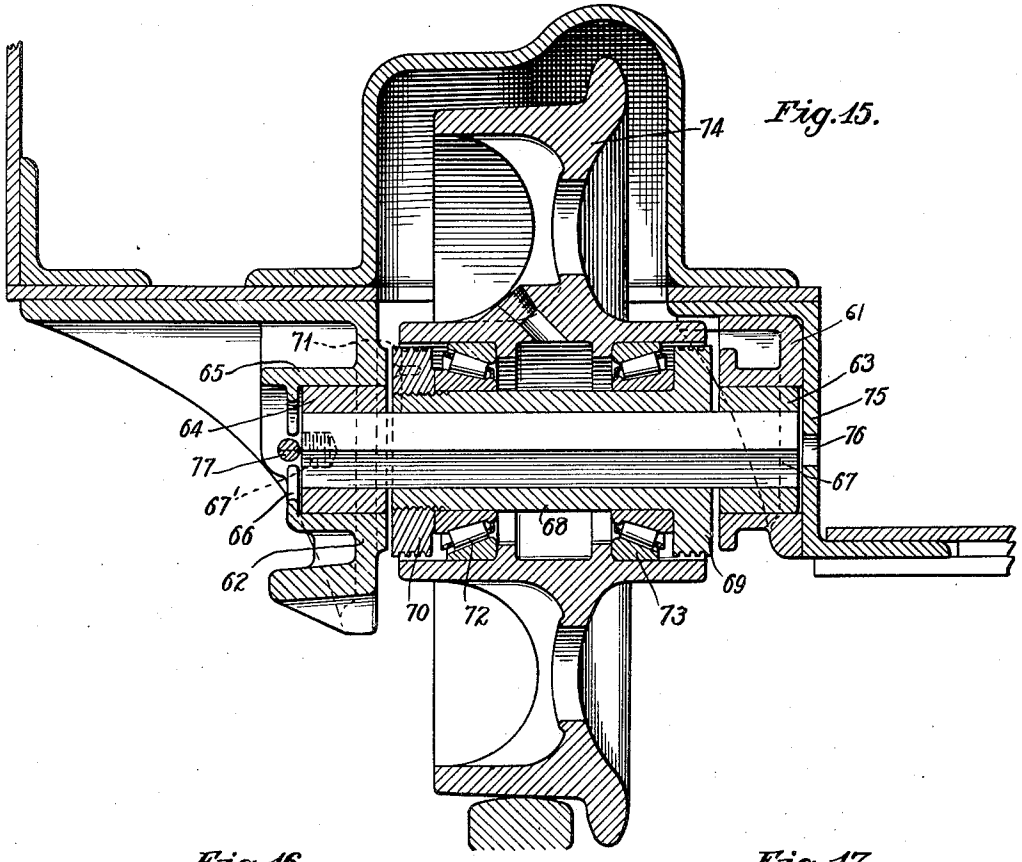


Fig. 15.

Fig. 16.

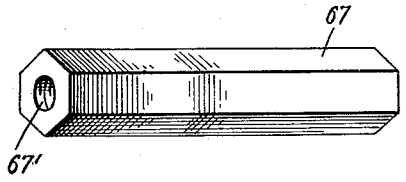


Fig. 17.

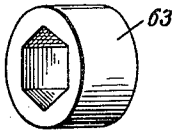


Fig. 18.

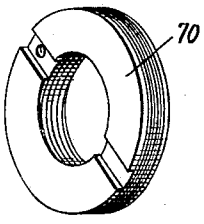
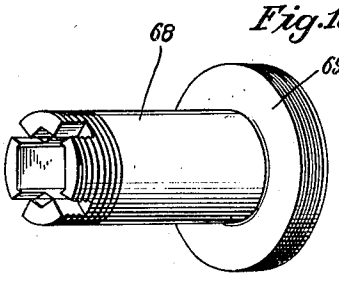


Fig. 19.



Inventor
Glenn E. Edmunds

By Lothrop & Morgan Darby & Curtis
Attorneys

Patented Oct. 6, 1936 2,056,651

UNITED STATES PATENT OFFICE

2,056,651

MINE CAR

Glenn E. Edmunds, Columbus, Ohio, assignor to The Bonney-Floyd Company, Columbus, Ohio, a corporation of Ohio

Application March 17, 1932, Serial No. 599,552
Renewed September 3, 1936

47 Claims. (Cl. 105—364)

The present invention relates to improvements in mine car construction and has as its general object the provision of a strong, capacious car of simple design.

The invention relates particularly to a new form of wheel mounting adapted to be associated with the car body in such a manner as to occupy a minimum amount of body space, and also relates to an improved form of stub axle and mounting means therefor. The invention as a whole has particular reference to cars of the stub axle type and has been shown in the accompanying drawings as applied to such a car.

In the drawings,

Figure 1 is a side elevation of a mine car embodying the present invention;

Figure 2 is an end elevation of the mine car of Figure 1;

Figure 3 is a section on line 3—3 of Figure 1;

Figure 4 is a longitudinal section of the forward lower portion of the car;

Figure 5 is an enlarged side elevation of the central portion of the car with parts broken away;

Figure 6 is a section on line 6—6 of Figure 5;

Figure 7 is a section on line 7—7 of Figure 5;

Figure 8 is a perspective of one unit of a tandem wheel mounting;

Figure 9 is a further perspective view of the mounting means of Figure 8;

Figure 10 is an axial section of the units of Figures 8 and 9;

Figure 11 is a perspective of a single wheel mounting unit;

Figure 12 is a side elevation of a portion of a car equipped with a modified form of wheel mounting;

Figure 13 is a section on line 13—13 of Figure 12;

Figure 14 is an axial section of the wheel mounting shown in Figures 12 and 13;

Figure 15 is an axial section of a wheel and axle assembly; and

Figures 16 to 19 are perspective views of elements involved in the construction shown in Figure 15.

Referring to the drawings and first to Figures 1 to 11, reference numeral 20 designates generally a mine car having the side walls 21 and 22, the end walls 23 and 24, and the bottom wall or floor 25. Longitudinal sill members 26 and 27 extend throughout the length of the car inwardly of the side walls, these sill members being here shown as angle bars disposed on the floor 25 with the floor secured to their lower horizontal webs. Bumpers 28 and 29 have parallel tongues as at 30, Figure 4, extending through apertures in the end walls and secured to the ends of the sill members. Draft tongues 31 and 32 are secured on the respective bumpers.

The body is suitably reinforced as by angle bars in the wall corners as at 33 and 34, Figure 2, and by angle bars 35 and 36 at the junctures of the floor and side walls, angle bars as at 37 and 38, Figure 2, joining the floor and end walls. Further, a suitable number of wall reinforcing straps 39 may be provided, and these may extend continuously under the floor if desired.

As shown in Figures 2 and 3, floor 25 is upwardly inclined outwardly of the sill members so that a low bottom car is secured. At suitable intervals, the floor intermediate the sill members and side walls is provided with recesses or apertures as at 40, Figure 1, in which are disposed the wheel mountings 41 and wheels 42. Since each wheel mounting is the same, a description of one will suffice.

The mounting means for each wheel may be made as an independent unit or those for the wheels on the same side of the car may be connected in suitable tandem relation. The tandem construction is contemplated in Figures 8 and 9 and the single unit construction in Figure 11. In Figures 1 to 7 and 10 the views are so taken that either form may be considered to be involved.

Each wheel mounting unit comprises a vertical web or pedestal 43 securable to the outer side of a sill member and having an outwardly projecting hollow boss or bearing 44 adapted to receive the inner end 45 of a stub axle, the outer end of the boss being radially flared as at 46 to present a thrust surface. If the unit is cast integral, which is the preferred construction and that shown in the drawings, the web 43 and flare 46 may be conveniently joined by an integral yoke 47 defining a guide opening for a brake cable. A wheel hood 48 is preferably formed with web 43, the lower edges of the wheel hood being bounded by flanges 49 and 50 inclined upwardly from web 43 at the angle of the floor between the sill and side wall and secured to the floor margins at the aperture 40. At the ends of flanges 49 and 50 is disposed a horizontally extending flange 51 in the plane of the floor and secured to the bottom web of the corner angle bar. The hood 48 includes a flare portion 52 joined to flange 51, an ear 53 joining the flare portion 52 and the outer side wall of the hood proper. Mounted beneath flare 52 coaxially with boss 44 is a sleeve or bearing 54 provided at its inner end with a radial flare 55, the latter serving as a thrust surface and pedestal. The outer end 56 of the stub axle is mounted in sleeve 54 and retained against outward displacement by means of a cotter pin 57 passed through apertures 58 formed in an upper substantially semi-circular prolongation of the sleeve. Displacement of the stub axle inwardly is prevented by the adjacent sill member. The flare 55 is

substantially coplanar with the outer side wall of the hood 48 and, in a cast article, merges with the latter to provide a pedestal for bearing 54.

If desired, web 43 and flange 51 may be continued as at 43' and 51' to constitute integral parts of the other wheel mounting on the same side of the car, Figures 8 and 9. It will thus be seen that each wheel mounting is rigidly positioned through connection with a main sill, the floor, the angle member between the floor and adjacent side wall, and consequently, through such angle member, with the side wall. As a further strengthening feature, the ear 53 of each mounting is preferably connected by means of a plate 59 with an angle bar 60 secured to the adjacent side wall. Since each wheel mounting conforms closely to the upper portion of the associated wheel, it forms a relatively small protuberance in the car and impairs the capacity of the latter to a negligible extent. While the mountings are shown as being formed as integral castings, it will be understood that the invention is not necessarily limited in this respect. For example, each mounting unit might be constituted by a wheel hood with separate axle bearings bolted thereto.

The flanges 49 and 50 constitute in themselves spaced transverse stiffening elements rigidly secured between main sill 26 and angle 35, the latter constituting an outer or auxiliary sill in addition to its function of connecting the side lading bottom with the side wall. Bearing 54 may be conceived of as supported by arms rigidly joined at their ends to the stiffening elements 49 and 50. Furthermore, to refer to Figures 8 and 9, the bar constituted by flanges 51 of two adjacent units and the connecting portion 51' acts as a short outer or auxiliary sill.

According to Figures 12 to 14, the construction of the wheel mounting is generally the same as that above described. Here, however, the side flanges 49' and 50' are continued horizontally to the outer side of the wheel hood 48' and then inclined upwardly. This means that the outer side wall of the hood extends lower than in the embodiment first described and a flare portion 55' is longitudinally extended to the outer ends of the horizontal portions of the side flanges 49' and 50'. The hood portion 52' is curved inwardly and downwardly to the lower edges of the outer side wall of the hood proper.

The advantage of this construction over that first described is that the low intermediate floor portion, instead of terminating inwardly of the wheels, terminates outwardly thereof with a consequent increase of car capacity.

Referring to Figures 15 to 19, I have shown, in connection with a car of known design, an improved wheel and axle assembly. Spaced side frames 61 and 62 have aligned bores receiving with a comparatively tight fit collars or bushings 63 and 64. The bearing sleeve 65 of side frame 62 is provided outwardly of collar 64 with inwardly extending circumferential ribs 66 which prevent outward displacement of the bushing.

A non-round stub axle 67, here shown as being hexagonal, has its ends engaged in the similarly contoured collar interiors so that rotation of the axle relative to the collars is impossible. A sleeve 68 is mounted on the axle and conforms interiorly to the axle cross section so as to be non-rotatable relative to the axle. At one end, the sleeve has an integral dust collar 69 and at its other end is threaded to receive the removable dust collar 70, lockable thereon by means of a latch 71. Intermediate the sleeve collars are disposed roller bearing assemblies 72 and 73 in operative relation to the wheel 74.

Inward displacement of collar 63 and axle 67 is prevented by the sill member 75 which, however, is provided with a small aperture 76 substantially coaxial with axle 67 through which a tool may be inserted to drive the axle outwardly. Normally, outward movement of the axle is prevented by a cotter pin 77 passed through apertures interrupting ribs 66 of bearing sleeve 65. Also the outer end of axle 67 is provided with a tapped bore 67' adapted to be engaged by a tractive tool for withdrawal of the axle.

The described axle presents a relatively large projected bearing area and the large diameter of the collars 63 and 64 also tends to minimize wear because of the large projected bearing area. Further, the axle being a rolled section, requires no machining, thus reducing its initial and replacement cost. The new wheel and axle assembly can obviously be used in conjunction with any stub axle mounting.

It will be understood that the invention is susceptible of various embodiments, and consequently, is not limited to the details which have been specifically described. I do not limit myself as to structure except as in the following claims.

I claim:—

1. In a car of the class described, a body comprising a floor and side and end walls, a pair of longitudinal sills secured to the floor, the floor being provided at each side with longitudinally spaced wheel openings adjacent said sills, wheel supporting units at said openings and secured to the sills; each of said units being positionable at an opening as a whole and each comprising a single stub axle, means for supporting said axle at both ends and flange portions attached to the transverse floor margins at an opening; and wheels mounted on the axles.

2. In a car of the class described, a body comprising a floor and side and end walls, a pair of longitudinal sills secured to the floor, the floor being provided at each side with longitudinally spaced wheel openings adjacent said sills, wheel supporting units at said openings and secured to the sills; each of said units being positionable at an opening as a whole and each comprising a single stub axle, means for supporting said axle at both ends, and a wheel hood closing one of the openings in the floor and having flange portions attached to the transverse floor margins at the opening; and wheels mounted on the axles.

3. In a car of the class described, a body comprising a floor and side and end walls, a pair of longitudinal sills secured to the floor above the latter, the floor being provided at each side with longitudinally spaced wheel openings adjacent said sills, wheel supporting units at said openings and secured to the sills; each of said units being positionable at an opening as a whole and each comprising a single stub axle, means for supporting said axle at both ends and flange portions attached to the transverse floor margins at an opening; and wheels mounted on the axles.

4. In a car of the class described, a body comprising a floor and side and end walls, a pair of longitudinal sills secured to the floor above the latter, the floor being provided at each side with longitudinally spaced wheel openings adjacent said sills, wheel supporting units at said openings and secured to the sills; each of said units being positionable at an opening as a whole and each comprising a single stub axle, means for support-

ing said axle at both ends, and a wheel hood closing one of the openings in the floor and having flange portions attached to the transverse floor margins at the opening; and wheels mounted on the axles.

5. In a car of the class described, a body comprising a floor and side and end walls, a pair of longitudinal sills secured to the floor above the latter, the floor being provided at each side with longitudinally spaced wheel openings between the sills and side walls, wheel supporting units at said openings and secured to the sills and side walls; each of said units being positionable at an opening as a whole and each comprising a single stub axle, means for supporting said axle at both ends, and flange portions attached to the transverse floor margins and a side wall at an opening; and wheels mounted on the axles.

6. In a car of the class described, a body comprising a floor and side and end walls, a pair of longitudinal sills secured to the floor above the latter, the floor being provided at each side with longitudinally spaced wheel openings between the sills and side walls, wheel supporting units at said openings and secured to the sills and side walls; each of said units being positionable at an opening as a whole and each comprising a single stub axle, means for supporting said axle at both ends, and a wheel hood closing one of the floor openings and having flange portions attached to the transverse floor margins at the opening; and wheels mounted on the axles.

7. In a car of the class described, a body comprising a floor and side and end walls, a pair of longitudinal sills secured to the floor above the latter, the floor being provided at each side with longitudinally spaced wheel openings outwardly of the sills, wheel supporting units at said openings, each of said units being positionable at an opening as a whole and each comprising a single stub axle and means for supporting said axle at both ends, the floor portions outwardly of the sills being upwardly inclined to the lower edges of the side walls, said lower edges being above the tops of the stub axles, and wheels mounted on the axles.

8. In a car of the class described, a body comprising a floor and side and end walls, a pair of longitudinal sills secured to the floor above the latter, the floor being provided at each side with longitudinally spaced wheel openings outwardly of the sills, wheel supporting units at said openings, each of said units being positionable at an opening as a whole and each comprising a single stub axle and means for supporting said axle at both ends, the floor portion outwardly of the sills being upwardly inclined from the sills to the lower edges of the side walls, said lower edges being above the tops of the stub axles, and wheels mounted on the axles.

9. In a car of the class described, a body comprising a floor and side and end walls, a pair of longitudinal sills secured to the floor above the latter, the floor being provided at each side with longitudinally spaced wheel openings outwardly of the sills, wheel supporting units at said openings, each of said units being positionable at an opening as a whole and each comprising a single stub axle and means for supporting said axle at both ends, the floor portions outwardly of the sills being upwardly inclined from the outer sides of the wheels to the lower edges of the side walls, said lower edges being above the tops of the stub axles, and wheels mounted on the axles.

10. A wheel mounting for cars of the type described, said mounting comprising a pair of opposed supports, a non-round stub axle having its ends mounted in said supports, a sleeve on said axle, the inner surfaces of said sleeve conforming to the axle surfaces to render the sleeve non-rotatable relative to the axle, a wheel on said sleeve, and anti-friction bearings interposed between the wheel and sleeve.

11. A wheel mounting for cars of the type described, said mounting comprising a pair of opposed supports provided with aligned bores, a non-round stub axle whose ends are disposed in said bores, collars in the bores receiving the axle ends, a sleeve on said axle between the collars, the inner surfaces of said sleeve and collars conforming to the axle surfaces to prevent relative rotation, a wheel on said sleeve, and anti-friction bearings interposed between the wheel and sleeve.

12. A wheel mounting for cars of the type described, said mounting comprising a pair of opposed supports provided with aligned bores, a non-round stub axle whose ends are disposed in said bores, collars in the bores receiving the axle ends, a sleeve on said axle between the collars, the inner surfaces of said sleeve and collars conforming to the axle surfaces to prevent relative rotation, means abutting the collar ends to prevent undue movement of the collars away from the sleeve, a wheel on said sleeve, and anti-friction bearings interposed between the wheel and sleeve.

13. A wheel mounting for cars of the type described, said mounting comprising a pair of opposed supports provided with aligned bores, a stub axle having its ends disposed in said bores, collars in the bores non-rotatably receiving the ends, a sleeve non-rotatable on the axle between the collars, a wheel on said sleeve, and anti-friction bearings interposed between the wheel and sleeve.

14. In a car of the class described, a longitudinal sill member having a vertical wall, a bearing member secured to said sill member and having a through bore, a stub axle having one end received in said bore, and a second bearing member supported opposite the first and having a through bore to receive the other end of the axle, the sill member being provided with an aperture in alignment with the axle and smaller than the cross section of the adjacent axle end, said aperture being adapted to pass a driving tool for the ejection of the axle.

15. A mine car comprising a body with side walls and flooring, the flooring having a longitudinal central portion below the side portions of the flooring, longitudinal body elements between said central flooring portion and side flooring portions and disposed above said central flooring portion, the side flooring portions having wheel openings therein between said longitudinal elements and the side walls; axle mountings each constituting an integral cast unit comprising bearings for a stub axle, a wheel hood, and means secured to the body parts around an opening in a side flooring portion, said last-named means including transversely extending flanges secured to the side flooring portion and a face secured against a longitudinal element; and wheeled stub axles in said axle mountings, said mountings extending outwardly from said longitudinal elements to points at least near said side walls.

16. A mine car comprising a body set on stub axles and wheels rotatable on said axles, in which the body has a sub axle-plane central flooring, longitudinal sills, side flooring, side walls, auxil-

iary sills spaced outwardly from the first said sills and secured to the side flooring, and a unitary wheel hood and axle pedestal secured between the spaced sills.

17. A mine car comprising a body set on stub axles and wheels rotatable on said axles, in which the body has a sub axle-plane central flooring, longitudinal sills, side flooring, side walls, auxiliary sills spaced outwardly from the first said sills and secured to the side flooring, and a unitary wheel hood and axle pedestal secured between the spaced sills with the wheel hood portion extending above the plane of the side flooring.

18. A mine car comprising a body set on stub axles and wheels rotatable on said axles, in which the body has a sub-axle-plane central flooring, longitudinal sills, side flooring, side walls, auxiliary sills spaced outwardly from the first said sills and secured to the side flooring, and a unitary wheel hood and axle pedestal between the spaced sills having a lateral flange secured to the side flooring.

19. In a mine car, a sill, an auxiliary sill member spaced outwardly therefrom, a unitary wheel hood and axle pedestal secured between the sills, and flooring connecting the sills in a plane intersecting the unit below the wheel hood portion, said unit comprising a divided lower part to receive a wheel, said divided lower part being provided with recesses adapted to receive an axle.

20. In a mine car, a side sill, an auxiliary sill member spaced outwardly therefrom. a central floor portion supported by the side sill, a unitary wheel hood and axle pedestal arranged between and secured to the side sill and sill member, said unit comprising depending bearing portions adapted to receive an axle in a plane above the horizontal plane of the central floor portion.

21. In a mine car comprising a body having side sills, a central floor portion supported by the side sills and side floor portions extending outwardly beyond the side sills and having wheel receiving openings, means for supporting the body comprising auxiliary sill members secured to the side floor portions, combined wheel hood and pedestal members secured to the side sills, auxiliary sill members and side floor portions and closing the wheel receiving openings, and wheel carrying axles in the pedestals arranged in a plane between the top and bottom portions of the side sills.

22. A mine car comprising a body having side sills, a central floor portion supported thereby, side floor portions secured to the sills and provided with wheel receiving openings, short sill members secured to the side floor portions, and wheel hoods secured to the side floor portions and provided with depending recessed bearing portions attached to the side sills and sill members adapted to receive stub axles in a horizontal plane above the plane of the central floor portion.

23. In a car of the class described, a body comprising side walls and flooring, longitudinal sills spaced inwardly from the side walls and to which the flooring is secured, wheel openings in the side flooring portions between said sills and side walls; and individual wheel mounting means at each of said openings and each comprising spaced transverse stiffening elements extending along the margins of the side flooring at an opening and secured to said margins, said stiffening elements being rigidly secured to the sill and side wall which are adjacent the opening, a bearing for one end of a stub axle secured to the sill at the opening, a rigid element extending in the longitudinal direction of the car between said transverse elements and rigidly fixed thereto, a bearing for the other end of a stub axle carried by said longitudinally extending element, and a wheeled stub axle mounted in said bearing, each wheel mounting means being positionable at an opening as a unit.

24. In a car of the class described, a body comprising side walls and flooring, longitudinal sills spaced inwardly from the side walls and to which the flooring is secured, wheel openings in the side flooring portions between said sills and side walls; and individual wheel mounting means at each of said openings and each comprising spaced transverse stiffening elements extending along the margins of the side flooring at an opening and secured to said margins, said stiffening elements being rigidly secured to the sill and side wall which are adjacent the opening, a bearing for one end of a stub axle secured to the sill at the opening, a rigid element extending in the longitudinal direction of the car between said transverse elements and rigidly fixed thereto, a bearing for the other end of a stub axle carried by said longitudinally extending element, a wheeled stub axle mounted in said bearings; and wheel hoods in rigid connection with said transverse elements, each wheel mounting means being positionable at an opening as a unit.

25. Structure according to claim 23 wherein said transverse elements are secured to the side walls through the intermediary of auxiliary sills.

26. Structure according to claim 23 wherein said transverse elements are secured to the side walls through the intermediary of auxiliary sills which also serve to connect the side walls and side flooring portions.

27. A mine car comprising a body unit with side walls and flooring, the flooring having a longitudinal central portion and side floor portions above said central portion, longitudinal body elements between said central flooring portion and side flooring portions and having vertical webs extending above said central flooring portion, the side flooring portions each having a plurality of wheel openings therein between said longitudinal elements and the side walls, individual unitary wheel mountings positioned in said openings; each wheel mounting unit comprising a single casting which includes a wheel hood and inner and outer longitudinal vertical flanges formed with bearings for a wheeled stub axle, the inner longitudinal flange extending substantially between the top planes of the central flooring portion and a side flooring portion and being secured to the adjacent longitudinal body element, and freely projecting flanges secured in lapped relation to the margins of a side flooring portion at one of said wheel openings, the mounting unit extending outwardly from the adjacent longitudinal body element and laterally beyond the outer axle bearing to the adjacent side wall of the body whereby the side wall serves as a body weight transmitting element to the mounting unit, each wheel mounting unit being inserted as a whole and independently of the others in a wheel opening; and wheeled stub axles mounted in the bearings of said wheel mounting units.

28. Structure according to claim 27 wherein the wheel mounting units are secured to the side walls through auxiliary sills.

29. Structure according to claim 27 wherein the wheel mounting units are secured to the side

walls through auxiliary sills, which also serve to connect the side walls and the side flooring portions.

30. In a mine car, main sills, a central lading bottom between the lower portions of the sills, side wings comprising side walls and side lading bottoms secured to the sills, and spaced transverse stiffening elements secured to the side walls, the side lading bottoms and the sills, wheeled stub axles, pairs of spaced axle bearings on opposite sides of the car, one of each pair extending from one of said stiffening elements to another, and wheel hoods covering apertures in the side lading bottoms, said wheel hoods, said axle bearing ends and said spaced stiffening elements being secured to the side lading bottom by means common to them all.

31. In a stub axle mine car, a body having side walls and side and central lading bottoms, body stiffening elements secured to the side walls and the side lading bottoms, and means for supporting the body comprising a pair of axle bearings secured to the body, one thereof having a central bearing portion and arms projecting in opposite directions therefrom and attached to adjacent body stiffening elements.

32. In a mine car, a body having side walls, longitudinal sills and a lading supporting bottom, transverse stiffening elements secured to the side walls and the bottom, stub axles, and oppositely arranged pairs of inner and outer axle bearing members spaced longitudinally of the car for supporting the body, said inner members being secured to the sills and said outer members extending between and being connected to adjacent stiffening elements.

33. In a mine car, a body having side walls, main sills and a lading supporting bottom, stiffening elements secured to the sills and the bottom, stub axles, and pairs of inner and outer axle bearing members for supporting the body and in which said stub axles are arranged, said bearing members being arranged in longitudinally spaced relation with respect to the body with the inner bearing members secured to the sills and the outer bearing members being below the plane of the side portions of the car bottom and extending between and connected to adjacent stiffening elements.

34. A mine car having a body comprising lading flooring and side walls secured to said flooring, a pair of longitudinal sills spaced inwardly from the side walls and disposed on top of said flooring and secured thereto, said flooring being provided with pairs of longitudinally spaced wheel openings between the respective sills and adjacent side walls, wheel housings covering said openings respectively and secured between and to the sills and side walls and to the transverse flooring margins at the openings; each of said housings including a pair of bearings, and a wheeled stub axle in the bearings of each of said housings.

35. A mine car having a body comprising lading flooring and side walls secured to said flooring, a pair of longitudinal sills spaced inwardly from the side walls and disposed on top of said flooring and secured thereto, said flooring being provided with pairs of longitudinally spaced wheel openings between the respective sills and adjacent side walls, wheel housings covering said openings respectively and secured between and to the sills and side walls and to the transverse flooring margins at the openings; the wheel housings comprising end closures disposed against the sills and constituted as axle bearings; axles in said bearings, and wheels on said axles and disposed in said housings.

36. A mine car having a body comprising a lading flooring and side walls, a pair of longitudinal sills spaced inwardly from the side walls and disposed on top of said flooring and secured thereto, said flooring being provided with pairs of longitudinally spaced wheel openings between the respective sills and adjacent side walls, wheel housings covering said openings respectively and secured between and to the sills and side walls and having flanges lapping and secured to the transverse flooring margins at the openings, each of said housings including a pair of bearings, and a wheeled stub axle in the bearings of each of said housings.

37. A mine car having a body comprising lading flooring and side walls secured to said flooring, a pair of longitudinal sills spaced inwardly from the side walls and disposed on top of said flooring and secured thereto, said flooring being provided with pairs of longitudinally spaced wheel openings between the respective sills and adjacent side walls, wheel housings covering said openings respectively and extending between the sills and side walls, means connecting the outer ends of said housings with the adjacent side walls, the wheel housings comprising inner end closures constituted as axle bearings disposed against the adjacent sills and secured thereto, means securing the housings to the transverse flooring margins at the openings; axles in said bearings, and wheels on said axles and disposed in said housings.

38. A mine car having a body comprising lading flooring and side walls secured to said flooring, a pair of longitudinal sills spaced inwardly from the side walls and disposed on top of said flooring and secured thereto, said flooring being provided with pairs of longitudinally spaced wheel openings between the respective sills and adjacent side walls, wheel housings covering said openings respectively and extending between the sills and side walls, angle members connecting the outer ends of said housings with the adjacent side walls, the wheel housings comprising inner end closures constituted as axle bearings disposed against the adjacent sills and secured thereto, means securing the housings to the transverse flooring margins at the openings; axles in said bearings, and wheels on said axles and disposed in said housings.

39. A mine car having a body comprising lading flooring and side walls secured to said flooring, a pair of longitudinal sills spaced inwardly from the side walls and disposed on top of said flooring and secured thereto, said flooring being provided with pairs of longitudinally spaced wheel openings between the respective sills and adjacent side walls, wheel housings covering said openings respectively and extending between the sills and side walls, means connecting the outer ends of said housings with the adjacent side walls, the wheel housings comprising inner end closures constituted as axle bearings disposed against the adjacent sills and secured thereto, the housings having flanges lapping and secured to the transverse flooring margins at the openings; axles in said bearings, and wheels on said axles and disposed in said housings.

40. A mine car having a body comprising lading flooring and side walls secured to said flooring, a pair of longitudinal sills spaced inwardly from the side walls and disposed on top of said flooring and secured thereto, said flooring being

provided with pairs of longitudinally spaced wheel openings between the respective sills and adjacent side walls, wheel housings covering said openings respectively and extending between the sills and side walls, angle members connecting the outer ends of said housings with the adjacent side walls, the wheel housings comprising inner end closures constituted as axle bearings disposed against the adjacent sills and secured thereto, the housings having flanges lapping and secured to the transverse flooring margins at the openings; axles in said bearings, and wheels on said axles and disposed in said housings.

41. A mine car comprising a body having a lading flooring and side and end walls, a pair of main sills extending from end to end of the body above the flooring and secured thereto, said sills being spaced inwardly from said side walls, a pair of wheel openings spaced longitudinally of the car between each sill and adjacent side wall, individual wheel housings closing said openings respectively and secured to the adjacent sills and side walls and to the transverse flooring margins at the openings, the said wheel housings each including a hood portion and an axle bearing adjacent the main sill and a second axle bearing aligned with the first and spaced outwardly therefrom, a stub axle mounted in the pair of bearings in each housing and a wheel mounted for rotation on each axle, the axis of rotation of the wheels being above at least the flooring portion between the sills.

42. A mine car comprising a body having a lading flooring and side and end walls, a pair of main sills extending from end to end of the body above the flooring and secured thereto, said sills being spaced inwardly from said side walls, a pair of wheel openings spaced longitudinally of the car between each sill and adjacent side wall, individual wheel housings closing said openings respectively and secured to the adjacent sills and side walls and to the transverse flooring margins at the openings, the said wheel housings each including a hood portion and an axle bearing adjacent the main sill and a second axle bearing aligned with the first and spaced outwardly therefrom, a stub axle mounted in the pair of bearings in each housing and a wheel mounted for rotation on each axle, the axis of rotation of the wheels being above at least the flooring portion between the sills, said last-named flooring portion being substantially uniplanar from end to end of the car.

43. A mine car comprising a body having a lading flooring and side and end walls, a pair of main sills extending from end to end of the body in inwardly spaced relation to the side walls and secured to the flooring, said sills being above the flooring portion which extends between them, a pair of wheel openings spaced longitudinally of the car between each of said sills and the adjacent side walls, a pair of auxiliary sills spaced outwardly of the main sills and secured to the flooring portions outwardly of the main sills, the said wheel openings being between the main and auxiliary sills, individual wheel housings closing said openings respectively and secured to the adjacent main and auxiliary sills and to the transverse flooring margins at the openings, the said wheel housings each including a hood portion and an axle bearing adjacent the main sill and a second axle bearing aligned with the first end spaced outwardly therefrom, a stub axle mounted in the pair of bearings in each housing, and a wheel mounted for rotation on each axle, the axis of rotation being above at least the flooring portion between the main sills.

44. A mine car comprising a body having a lading flooring and side and end walls, a pair of main sills extending from end to end of the body in inwardly spaced relation to the side walls and secured to the flooring, said sills being above the flooring portion which extends between them, a pair of wheel openings spaced longitudinally of the car between each of said sills and the adjacent side wall, a pair of auxiliary sills spaced outwardly of the main sills and secured to the flooring portions outwardly of the main sills, the said wheel openings being between the main and auxiliary sills, individual wheel housings closing said openings respectively and secured to the adjacent main and auxiliary sills and to the transverse flooring margins at the openings, the said wheel housings each including a hood portion and an axle bearing adjacent the main sill and a second axle bearing aligned with the first end spaced outwardly therefrom, a stub axle mounted in the pair of bearings in each housing, and a wheel mounted for rotation on each axle, the axis of rotation being above at least the flooring portion between the main sills, said last-named flooring portion being substantially uniplanar from end to end of the car.

45. A mine car comprising a body unit with side walls and flooring, the flooring having longitudinal central portion and side floor portions, longitudinal body elements between said central floor portion and side floor portions, said longitudinal body elements being rigidly secured to the flooring and projecting above said central floor portion, the side floor portions each having a plurality of wheel openings therein spaced longitudinally thereof between said longitudinal elements and the side walls, individual unitary wheel mountings positioned in said openings; each wheel mounting unit comprising a single casting which includes a wheel hood and inner and outer longitudinal vertical flanges formed with bearings for a wheeled stub axle, the inner longitudinal flange being secured to the adjacent longitudinal body element, and freely projecting flanges secured in lapped relation to the margins of a side floor portion at one of said wheeled openings, the mounting unit extending outwardly from the adjacent longitudinal body element and laterally beyond the outer axle bearing to the adjacent side wall of the body, whereby the side wall serves as a body weight transmitting element to the mounting unit, each wheel mounting unit being inserted as a whole and independently of the others in a wheeled opening; and wheeled stub axles mounted in the bearings of said wheeled mounting units.

46. Structure according to claim 45 wherein the wheel mounting units are secured to the side walls through auxiliary sills.

47. Structure according to claim 45 wherein the wheel mounting units are secured to the side walls through auxiliary sills which also serve to connect the side walls and the side floor portions.

GLENN E. EDMUNDS.