Dec. 5, 1933. V. WILLOUGHBY 1,937,618

MINE CAR

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Fig. 1.

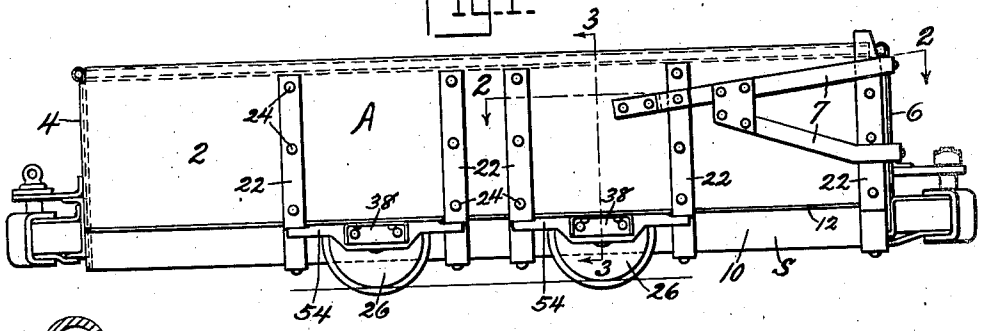


Fig. 4.

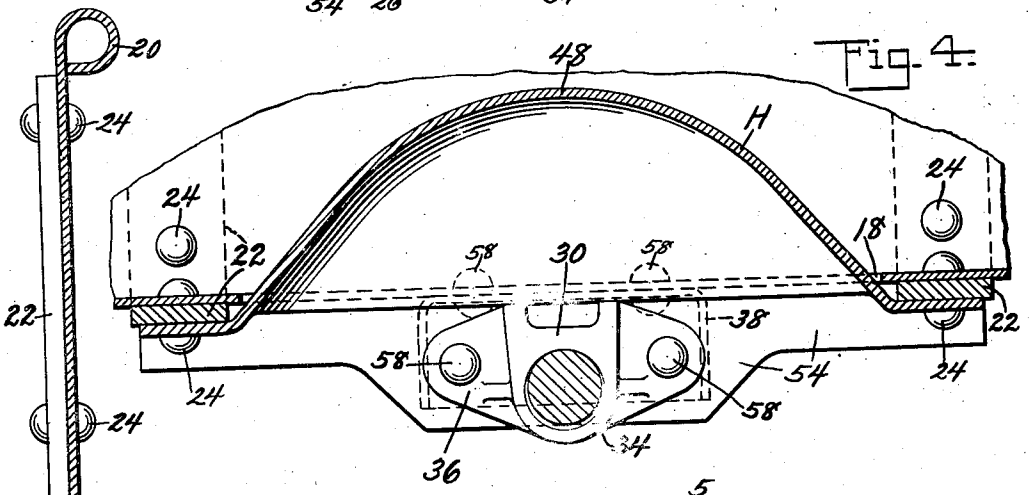
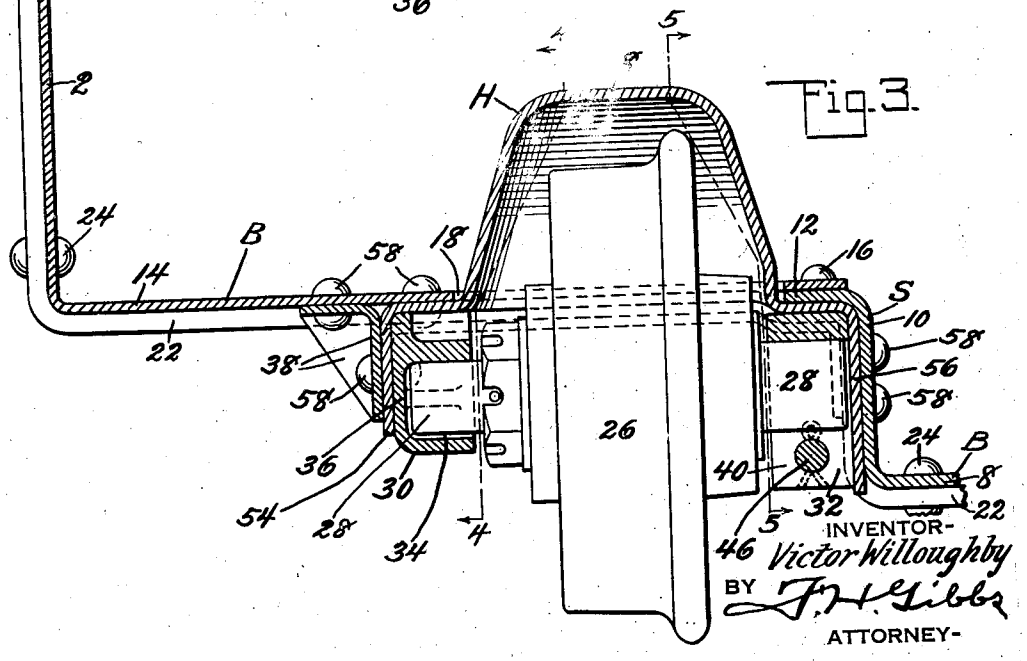


Fig. 3.



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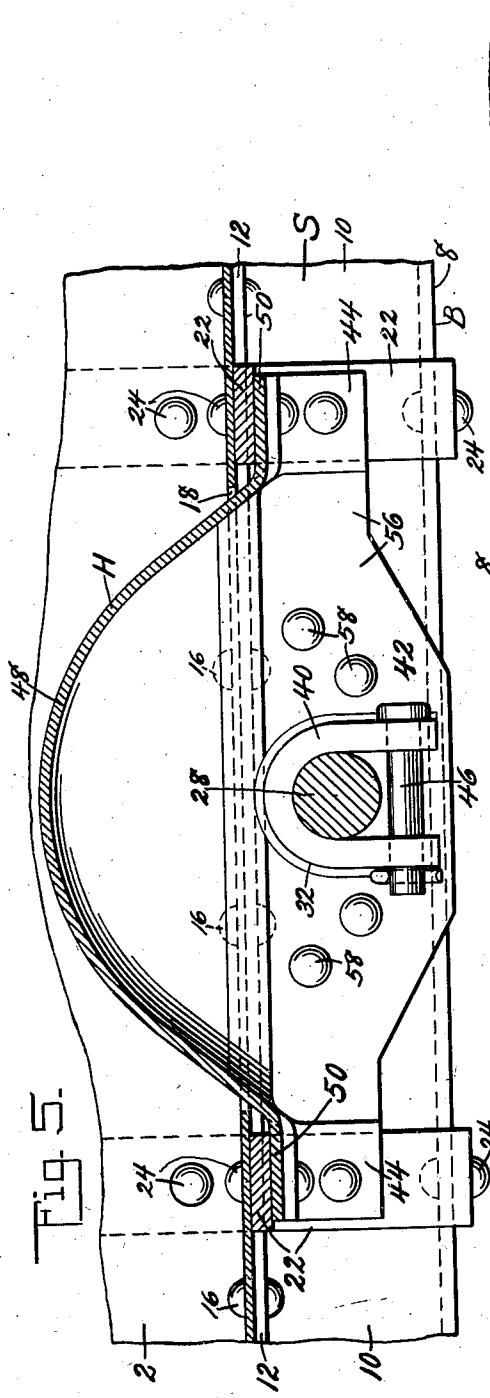


Fig. 5.

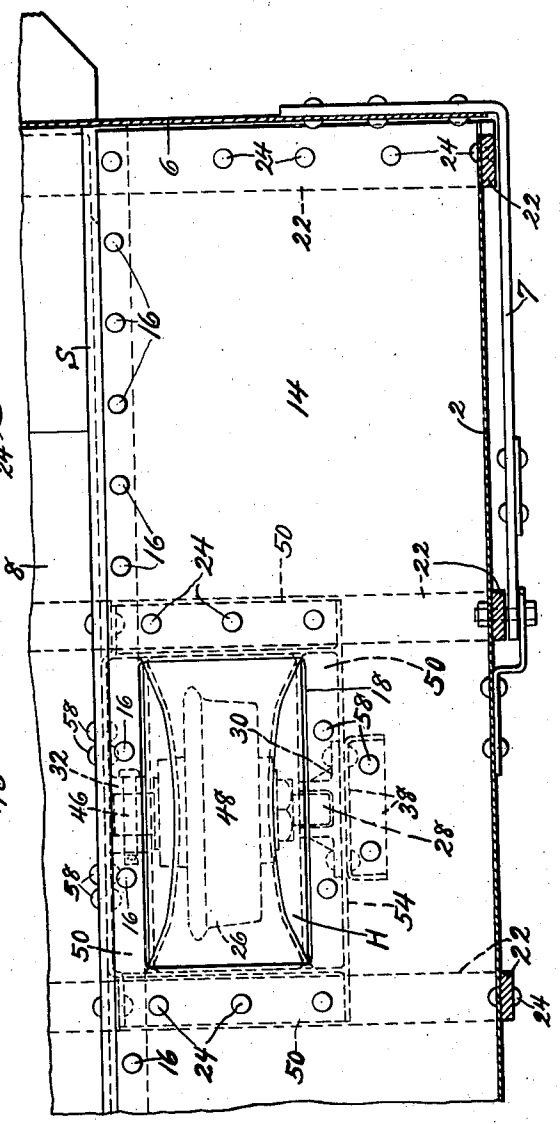


Fig. 2.

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MINE CAR

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Fig. 8.

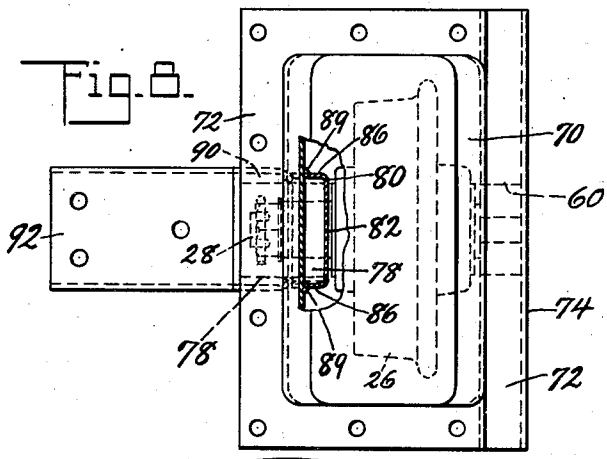


Fig. 7.

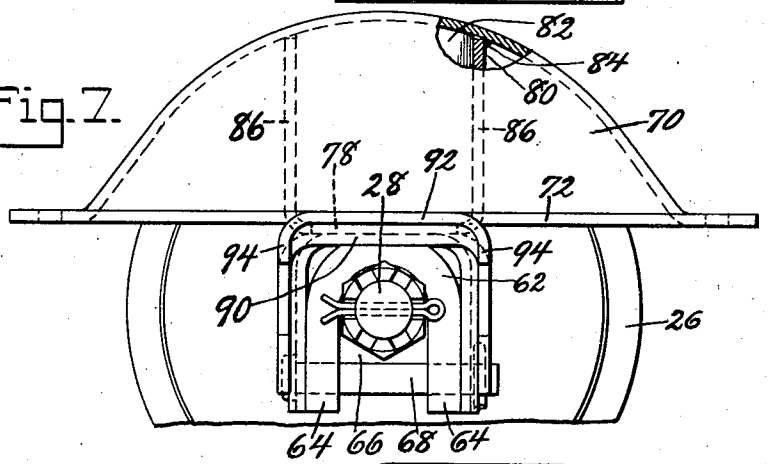
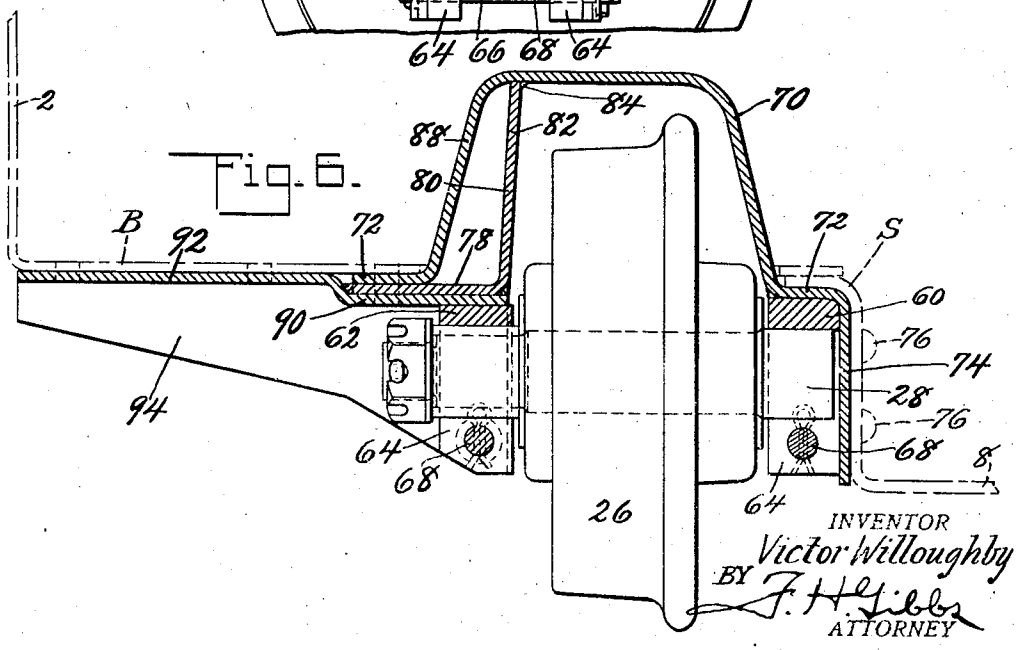


Fig. 6.



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Patented Dec. 5, 1933 1,937,618

UNITED STATES PATENT OFFICE

1,937,618

MINE CAR

Victor Willoughby, Ridgewood, N. J., assignor to American Car and Foundry Company, New York, N. Y., a corporation of New Jersey

Application January 27, 1933. Serial No. 653,850

12 Claims. (Cl. 105—364)

This invention relates to mine cars and has for one object the provision of a new and improved mine car of large lading capacity in which the body is supported by stub axles.

Another object of this invention is the provision of a mine car having a new and improved combined stub axle and wheel hood assembly.

Other objects and advantages of this invention will be apparent from the following description taken in conjunction with the accompanying drawings in which:

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

Fig. 2 is a sectional view on the line 2—2, Fig. 1.

Fig. 3 is a sectional view on the line 3—3, Fig. 1.

Fig. 4 is a sectional view on the line 4—4, Fig. 3.

Fig. 5 is a sectional view on the line 5—5, Fig. 3.

Fig. 6 is a sectional view through the side floor portion of a car showing a modified form of the invention.

Fig. 7 is a side elevation view of the construction shown in Fig. 6, and

Fig. 8 is a top plan view of the construction shown in Figs. 6 and 7.

Referring now more particularly to the drawings in which similar characters of reference designate similar parts in the several views, the mine car of the present invention comprises a body indicated generally at A having side walls 2, a fixed end wall 4, and an end gate 6, the latter being provided with a bail 7. While the drawings show an end dump mine car, it will be apparent from the description that within the spirit of the invention both ends of the car body may be provided with fixed end walls to provide a rotary dump car if desired.

The body includes a bottom indicated generally at B and comprises a central floor portion 8 secured to or formed integral with the body side sills. In the instance shown, the side sills are indicated generally at S and comprise upwardly and then outwardly extending flanges 10 and 12 respectively of the side edge portions of the central floor 8. If desired, independent members such as rolled Z-sections, channels, angles or the like, or suitable plate metal members may be utilized to form the side sills.

The car body also includes two main oppositely arranged side sections but inasmuch as they are identical only one thereof is shown. The side section is shown clearly in Fig. 3 and is shaped by a bending operation to provide a side floor portion 14 and the side wall 2 integral with said portion 14, the section being secured as by rivets 16 to the upper flange 12 of the side sill and being provided with wheel receiving openings 18. The upper edge portions of the side and end walls are stiffened in any suitable manner as by an inturned bead 20 and the entire body is reinforced by belts 22 secured to the side walls and extending under the body from side to side; the belts extending from the side floor portions and central floor portion and lying against the side sills. The belts 22 are secured to the car body by suitable fasteners such as the rivets 24.

The wheels are indicated at 26 and they carry stub axles 28 mounted in oppositely arranged outer and inner bearing members 30 and 32 respectively, bearing 30 comprising a socket 34 formed with a bracket 36 secured to a support 38 depending from the side floor portion 14 (see Fig. 3). Bearing member 32 comprises a pedestal 40 formed integral with a bracket 42 having oppositely directed arms 44 which are of a length sufficient to extend between adjacent straps 22. A pin 46 extends between the pedestal jaws for an obvious purpose, as clearly shown in Figs. 2 and 5.

To close the openings 18 and to cover the wheels 26, wheel housings indicated generally at H are provided, each of which comprises a metal pressing formed to provide a hood portion 48 having a marginal attaching flange 50 extending completely therearound and of such a dimension as to underlie the side floor portion completely around the opening 18 (see Fig. 2), and to extend between and to underlie adjacent belts 22, as shown in Figs. 4 and 5. In practice the end portions of the marginal flange 50 are interposed between the belts 22 and the arms 44 of the bearing member 32 and the rivets which connect the arms 44 to the car body also serve to secure the wheel housings H.

The flange 50 at its sides is formed with depending attaching flanges or extensions 54 and 56 arranged respectively between bearing member 30 and support 38 and between bearing member 32 and the side sill S as shown in Fig 3. Suitable fasteners such as the rivets 58 secure the bearing members 30 and 32, housing H and side sill S and support 38 together.

The car body is assembled by connecting the side sections formed of the side floor portions 14 and the side walls 2 to the sills S. When the car body has been fabricated it may be inverted and the wheel hoods H which are formed as pressings are then inserted through the wheel openings 18. The bearings 30 and 32 are then applied in position and secured, together with the wheel hood, to their respective supports, the support 38 and the side sill S. This being done, the stub axle

with its associated wheel 26 may then be easily inserted into the bearings 30 and 32 and secured against displacement by the pin 46. The construction herein provides a strong and durable mine car which is formed of few parts and is easy and inexpensive to manufacture. It is apparent that the wheels 26 may be easily and quickly removed from their supporting bearings 30 and 32 for replacement or repair.

Figs. 6, 7 and 8 show a modified form of the invention and more particularly disclose a form of car at the wheel housing portion. The wheels 26 carry stub axles 28 which are mounted in inner and outer pedestal members. To distinguish the construction in Figs. 6, 7 and 8 from the remaining figures in the drawings the pedestal members are indicated at 60 and 62 respectively and are substantially identical, each having legs 64 which define therebetween a jaw 66 which receives the axle 28. Tie bars 68 are provided for an obvious purpose.

The wheel housing in Figs. 6, 7 and 8 is indicated at 70 and is substantially rectangular in plan, being provided with a marginal attaching flange 72 which, along one side portion of the housing, extends under the side sill S and is provided with a depending attaching flange 74 interposed between the inner pedestal members 60 and the side sill. Suitable fasteners 76 secure the pedestal 60, side sill S and flange 74 together as clearly shown in Fig. 6. The opposite portion of flange 72 underlies the side floor portion B of the car bottom (shown in broken lines in Fig. 6) and rests upon the horizontal portion 78 of an internal wheel housing brace member indicated generally at 80 provided with a vertically arranged web portion 82 which extends to the upper portion of the wheel housing 70 and has its upper edge portion welded to said housing as shown at 84. The side edge portions of the web 82 are flanged outwardly as shown at 86 and are united with the upwardly sloping outer wall 88 of the wheel housing 70 by being welded thereto as shown at 89. The horizontal leg 78 of the brace member 80 is supported on the downwardly offset portion 90 of a channel-shaped side floor portion supporting member 92. The portion 90 of the channel member 92 is downwardly offset a distance sufficient to permit the marginal flange 72 of the wheel housing 70 to be in substantially the same horizontal plane as the web of the channel member 92, as shown clearly in Fig. 6, the channel member 92 being attached to the side floor portion B and the latter overlapping the marginal flange 72 as shown in broken lines in Fig. 6. If desired, the rivets 76 may be eliminated and connection of the pedestal 60, flange 74 and sill S be made by welding. It is also apparent that while other rivets or fasteners may be used to connect the side floor portion B and channel member 92, these elements may be connected, if desired, by welding. The member 92 serves as a support for the outer pedestal member 62 and the latter may be secured in position in any suitable manner as by being welded to said member 92. In the construction shown in Figs. 6, 7 and 8 it is apparent that the several parts may be connected together by welding and that the wheel housing 70 is braced by the member 80. It will also be apparent that the side floor portions B are stiffened and reinforced by the member 92 and the connection between the wheel housing 70, brace member 80, and channel member 92 is such as to stiffen the car at this particular zone. Due to the fact that the members 60 and 62 are pedestal members it will be apparent that upon removal of the tie bars 68 the body may be lifted to remove the wheel 26 and axle 28 as an assembled unit. In assembling the car shown in the modified form it is obvious that the wheels and axles may be applied as assembled units to the pedestal members 60 and 62.

It is believed that the construction of the car of the present invention will be fully apparent to those skilled in the art but it is to be understood that the drawings herein are for illustrative purposes only and various changes in the form and proportions of the construction may be made within the scope of the appended claims without departing from the spirit of the invention.

What is claimed is:

1. In a mine car, a body comprising a sill, a side floor portion secured to the sill and having a wheel receiving opening, a wheel projecting into the opening and having a stub axle, straps secured to the side floor portion, a wheel housing projecting through the opening and provided with an attaching flange arranged against the under surface of said side floor portion and extending between adjacent straps, an axle bearing member secured to the sill and attaching flange and extending between adjacent straps and secured to the side floor portion and to said flange and straps, and an axle bearing member disposed opposite said first-named bearing member secured to said flange and supported by the side floor portion.

2. In a mine car, side sills, side floor portions secured to the side sills and provided with wheel receiving openings, pressed metal wheel housings projecting through said openings and each having an attaching flange arranged against the side sills and the lower under surface of the side floor portion, a pedestal supported by the side sills, a bearing member opposite the pedestal supported by the said floor portion and attaching portions depending from the attaching flange and lapping and secured to said pedestal and bearing member.

3. In a mine car, a body comprising side sills, a central floor portion supported by the side sills, and side sections secured to the side sills and comprising side floor portions and side walls formed of a single piece of material whereby said body from the side sills outward is generally devoid of seams, oppositely arranged bearing members supported by the side sills and side sections respectively, wheels projecting through the side floor portions and having stub axles mounted in the bearing members, and pressed metal wheel hoods projecting through the side floor portions and connected with the under surfaces of the latter and with the bearing members.

4. In a stub axle mine car, a body comprising side sills, a central floor portion, side floor portions and side walls, straps secured to said side walls and underlying the side floor portions, axle bearing members secured to the side sills and extending between adjacent straps, said members having pedestals formed therewith, bearing members supported by the side floor portions and alined with the first-named bearing members, wheels projecting through the side floor portions, stub axles carried by said wheels and mounted in said bearing members and pressed metal wheel housings projecting through the side floor portions.

5. In a mine car, the combination with a body including side sills, a central floor portion and side floor portions, of means supporting said body comprising spaced bearing elements secured respectively to the side floor portions and side sills,

wheels projecting through the side floor portions and carrying stub axles arranged in said bearing members and pressed metal wheel housings covering said wheels and each provided with a marginal flange underlying the side floor portions and having depending attaching portions connected with the side sills and side floor portions and bearing members.

6. In a mine car, a body comprising side sills, a central floor portion, a side floor portion, and straps secured to the under surface of said side floor portion, a bearing member secured to the side sills and of a length sufficient to lap adjacently arranged straps, said bearing member including a pedestal portion, a bearing support depending from the side floor portion, a socketed bearing member carried by the support and alined with the pedestal portion so as to receive a stub axle, a wheel in which said axle is mounted projecting through the side floor portion and a housing covering said wheel and secured to the under surface of the side floor portion, said housing being of a length sufficient to extend between adjacent straps and having its end portions interposed between said straps and the first-named bearing member.

7. In a mine car, a body comprising side sills, a central floor portion, a side floor portion, and straps secured to the under surface of said side floor portion, a bearing member secured to the side sills and of a length sufficient to lap adjacently arranged straps, said bearing member including a pedestal portion, a bearing support depending from the side floor portion, a socketed bearing member carried by the support and alined with the pedestal portion so as to receive a stub axle, a wheel in which said axle is mounted projecting through the side floor portion and a housing covering said wheel and secured to the under surface of the side floor portion, said housing being of a length sufficient to extend between adjacent straps and having its end portions interposed between said straps and the first-named bearing member, and further having oppositely arranged depending attaching flanges secured respectively to the side sills and bearing support.

8. In a mine car, a body comprising side sills, a central floor portion, a side floor portion, and straps secured to the under surface of said side floor portion, a bearing member secured to the side sills and of a length sufficient to lap adjacently arranged straps, said bearing member including a pedestal portion, a bearing support depending from the side floor portion, a socketed bearing member carried by the support and alined with the pedestal portion so as to receive a stub axle, a wheel in which said axle is mounted projecting through the side floor portion and a housing covering said wheel and secured to the under surface of the side floor portion, said housing being of a length sufficient to extend between adjacent straps and having its end portions interposed between said straps and the first-named bearing member, and further having oppositely arranged depending attaching flanges arranged respectively between the bearing members and side sills and bearing support.

9. In a mine car, a body comprising side sills, and a side floor portion secured thereto and provided with a wheel receiving opening, a pressed metal wheel housing projecting upwardly through the wheel receiving opening and having a marginal attaching flange underlying the side floor portion, and means for stiffening said housing comprising an angle-shaped member having the legs thereof horizontally and vertically arranged respectively, the horizontal leg thereof being secured to the attaching flange of the housing and the vertical leg thereof extending to the upper portion of said housing and being secured thereto.

10. In a mine car, a body comprising side sills, and a side floor portion secured thereto and provided with a wheel receiving opening, a pressed metal wheel housing projecting upwardly through the wheel receiving opening and having a marginal attaching flange underlying the side floor portion, and means for stiffening said housing comprising an angle-shaped member having the legs thereof horizontally and vertically arranged respectively, the horizontal leg thereof being secured to the attaching flange of the housing and the vertical leg thereof extending to the upper portion of said housing and being secured thereto, and flanges formed on the side edge portions of said vertical leg extending to and connected with a side wall of said housing.

11. In a mine car, a body comprising a side floor portion having a wheel receiving opening, a side wall, a wheel projecting through the opening and having a stub axle, inner and outer bearing members for the axle, a supporting element for the outer bearing member secured to the side floor portion and having a downwardly offset portion adjacent said bearing member, a wheel housing having an attaching flange underlying the side floor portion, and a housing brace member having a portion interposed between the offset portion of the supporting element and the attaching flange and another portion extended into the wheel housing and secured thereto.

12. In a mine car, a body comprising a side floor portion having a wheel receiving opening, a side wall, a wheel projecting through the opening and having a stub axle, inner and outer bearing members for the axle, a substantially channel-shaped supporting element for the outer bearing member secured to the side floor portion and extending substantially to the side wall and having a downwardly offset portion adjacent said bearing member, a wheel housing including an attaching flange underlying the side floor portion and secured to the offset portion, said housing also including a hood portion covering the wheel and a housing brace having one portion interposed between the attaching flange and offset portion and having flanges lapping the side edge portions of the supporting member and another portion extending upwardly into the hood portion and secured to the top and side wall thereof.

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