June 29, 1937. V. WILLOUGHBY 2,085,621

MINE CAR

Filed June 8, 1925 2 Sheets-Sheet 1

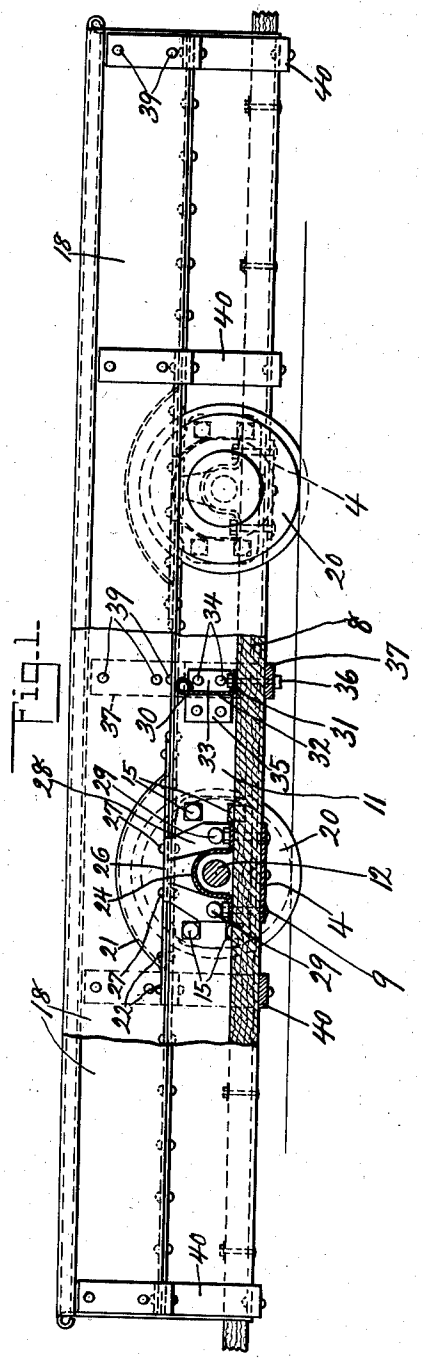

Fig. 1.

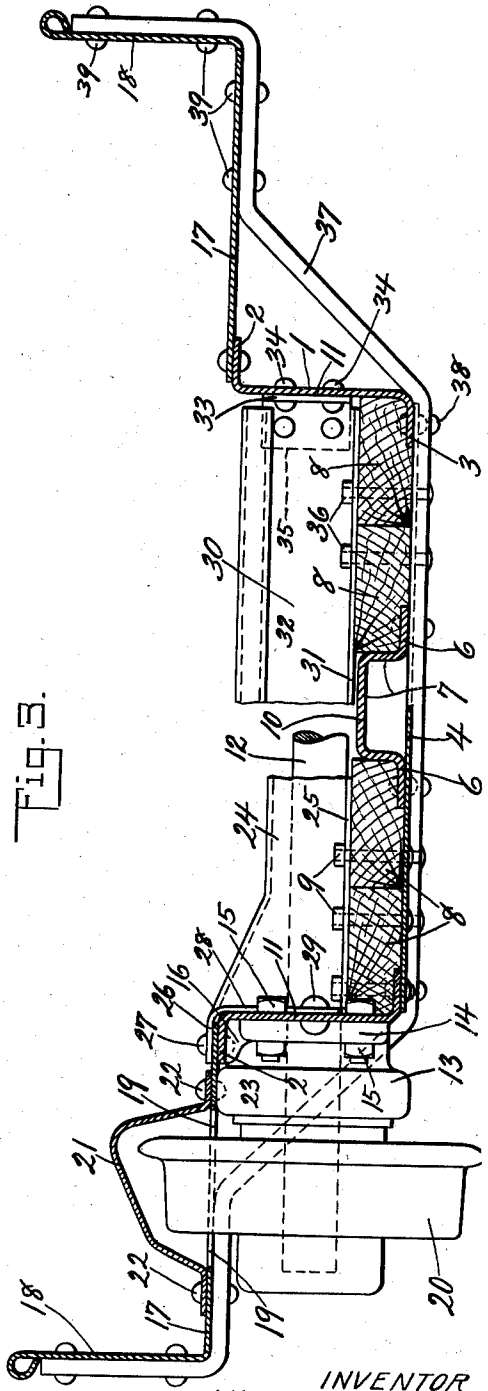

Fig. 3.

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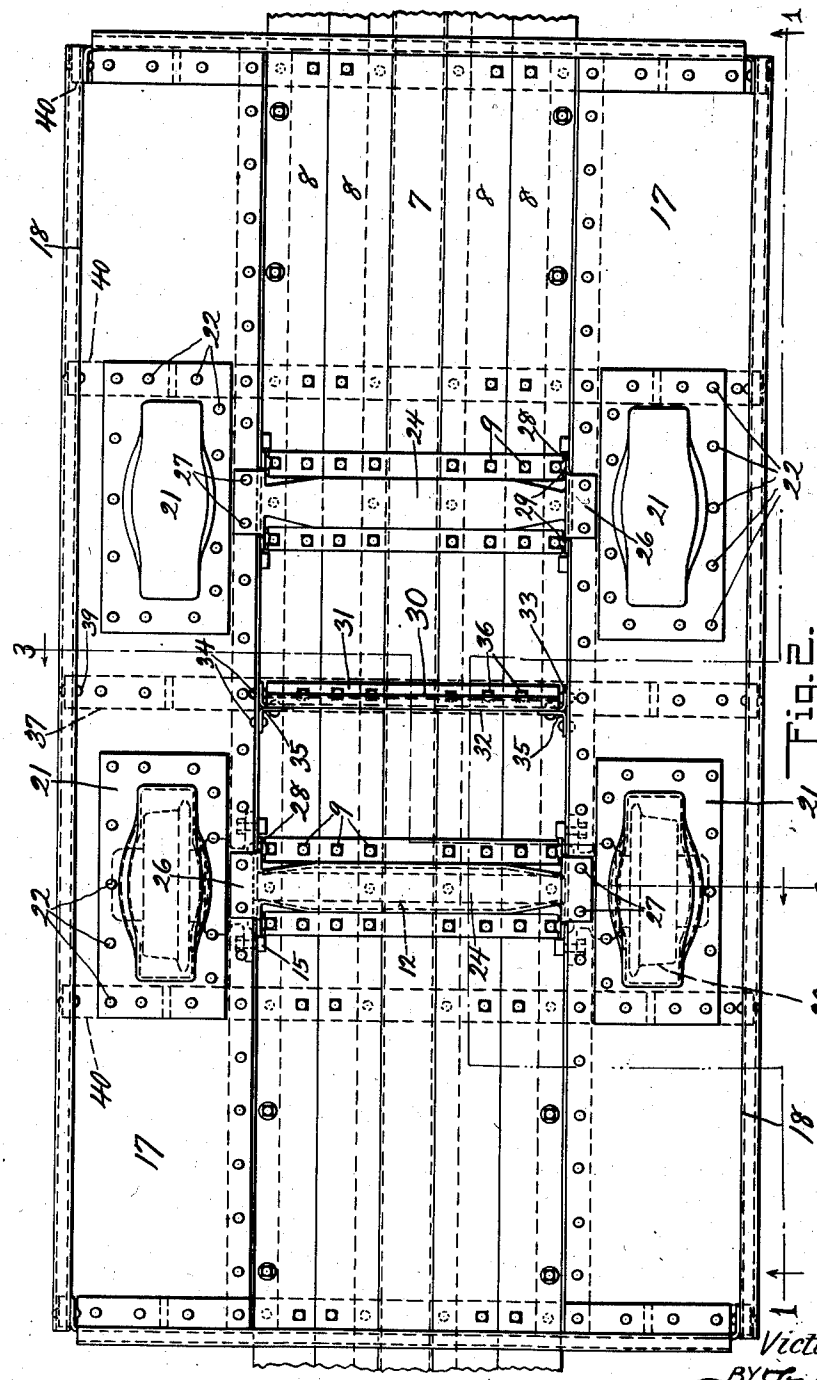

Fig. 2.

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2,085,621

MINE CAR

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Application June 8, 1925, Serial No. 35,738

20 Claims. (Cl. 105—364)

The following is a full, clear and exact description, such as will enable others skilled in the art to which it appertains to make and to use the same, reference being had to the accompanying drawings which illustrate the preferred form of the invention; though it is to be understood that the invention is not limited to the exact details of construction shown and described, as it is obvious that various modifications thereof within the scope of the claims will occur to persons skilled in the art.

In said drawings:

Fig. 1 is a partial side elevation of a mine car constructed in accordance with this invention, parts being broken away along the line 1—1 of Fig. 2 to show other parts more clearly;

Fig. 2 is a partial top plan view of the mine car shown in Fig. 1; and

Fig. 3 is a vertical transverse section of the mine car shown in Fig. 1 taken on the line 3—3 of Fig. 2.

It is an object of this invention to provide a mine car of improved construction in which the journal boxes directly support the side floor portions. It is also an object of this invention to provide a construction in which the sills and center floor portion are connected so as to prevent distortion of the car body by the load on the center floor portion.

With these and other objects in view a mine car constructed in accordance with this invention comprises, as shown in the drawings, flanged sills 1 formed of Z-shape pressings or rolled shapes and arranged with outwardly projecting top flanges 2 and inwardly projecting bottom flanges 3, the bottom flanges 3 of the sills 1 being joined by tie plates 4 riveted thereto. The tie plates 4 are connected to the outwardly projecting flanges 6 of the inverted U or trough shaped draw and buffer beam 7 which extends centrally of the car from end to end. Longitudinally extending planks 8, gained along an edge to fit the flanges of the sills 1 and buffer beam 7 are secured to the tie plates 4 by bolts 9 and with the web 10 of the buffer beam 7 form the center portion of the floor of the car.

The webs 11 of the sills 1 are provided with openings to receive the axles 12 which pass above the center portion of the floor of the car and rotate in journal boxes 13 having vertical flanges 14 secured to the webs 11 of the sills 1 by bolts 15 and flanges 16 which serve to support the top flanges 2 of the sills 1.

Secured to the top flanges 2 of the sills 1 are the side floor portions 17 extending horizontally from the top flanges 2 and formed of plates having their outer portions bent upwardly to form the car sides 18 integral with the side floor portions 17. The side floor portions 17 are provided with openings 19 into which the upper portions of the wheels 20 mounted on the axles 12 project and pressed wheel hoods 21 secured to the side floor portions 17 by rivets 22 extend over the tops of the wheels 20 and close the openings 19. The side floor portions 17 are secured to the upper surfaces of the top flanges 2 of the sills 1 and rest upon the outer portions 23 of the journal boxes 13 which project above the flanges 16 of the journal boxes 13 and are provided with recesses to receive the heads of the rivets 22 which secure the wheel hoods 21 to the side floor portions 17. The side walls 18 have their opposite ends connected to end walls 18', the side and end walls being stationary and each thereof contributing to the support of the other.

Extending between the sills 1 at the axles 12 are axle housings 24 of substantially inverted U-shape with laterally projecting horizontal flanges 25 and increasing in height and decreasing in width at the ends where they extend to the tops of the sills 1 and are provided with outwardly extending horizontal flanges 26 which overlap the inner edges of the side floor portions and the top flanges 2 of the sills 1 and are secured thereto by the rivets 27, the rivets 27 having heads fitting in recesses in the journal boxes. The axle housings 24 are also formed with outwardly projecting vertical flanges 28 which are secured to the webs 11 of the sills 1 by rivets 29. The flanges 25 of the axle housings 24 are secured to the center portion of the floor of the car by the bolts 9 which engage the planks 8 and tie plates 4.

At the center of the car the sills 1 are connected by a tie 30 shown as a flanged plate having a horizontal flange 31 resting on the planks 8 and a vertical flange 32 having at its ends laterally projecting vertical flanges 33 secured to the webs 11 of the sills 2 by rivets 34. Angle brackets 35 riveted to the vertical flange 32 of the tie 30 and the webs 11 of the sills 1 aid in securing the tie 30 to the sills 1.

The horizontal flange 31 of the tie 30 is secured to the center portion of the floor by the bolts 36 which engage the horizontal flange 31, the planks 8 and a strap brace 37 which passes beneath the center portion of the floor and extends to each side of the car. The brace 37 is fastened to the bottom flange 3 of the sills 1 by the rivets 38 and

outside of the sills is bent upwardly to contact with the lower surfaces of the outer portions of the plates forming the side portions 17 of the floor and with the outer surfaces of the car sides and is fastened thereto by rivets 39. Additional braces 40 of similar construction and secured to the floor and sills 1 in the manner just described are placed at the ends of the car and between the ends of the car and the axle housings 24. The braces 40, sometimes called binders or ties, are connected to the central floor planks, the side floor portions 17 and to the side walls 18 of the car body by a suitable bolt or rivet connection as may be desired.

It will be noted that in a car constructed as above described the planks forming the center portion of the floor may be readily removed for replacement or repair by removing the bolts securing the planks in position and sliding the planks toward an end of the car and that, when in position, the floor planks are given adequate support by the tie plates 4, braces 37 and 40, flanges 3 of the sills 1, flanges 6 of the buffer beam 7 and the bolts which secure the planks to the flanges 25 and 31 of the axle housings 24 and tie 30, respectively. It will also be noted that the journal boxes 13 and axles 12 may be removed by removing the bolts 15 and that, when in position, the journal boxes 13 directly support the side portions 17 of the floor and it will be further noted that the axle housings 24 and tie 30 brace the car body at the center and prevent deformation of the car body by reason of the load upon the center portion of the floor. Manifestly the bolts 9 and 36 are readily removable and when so removed the planks 8 of the floor may be removed longitudinally of the car from beneath the axle housings and the braces extending transversely of the car above said planks, thus facilitating repairs.

The buffer beam 7 is preferably formed of metal as showin in the drawings, Fig. 3, and is so positioned as to resist a great portion of the buffing shocks to which cars of this type are commonly subjected. The end portions of the buffer beam and the planks forming the floor are broken away as the portions not shown are of conventional type.

The planks 8 forming parts of the central floor portion extend longitudinally of the car and parallel with the side sills 1, so that the grain of the wood extends longitudinally of the car body.

Where in the following claims the limitation "longitudinally extending planks" is employed, it is to be considered as covering or referring to planks in which the grain of the wood extends longitudinally of the car body.

What is claimed is:

1. In a mine car, sills having vertical webs and oppositely disposed top and bottom flanges, side floor portions secured to said top flanges, tie plates connecting said bottom flanges, a center floor portion carried by said tie plates, means connecting said sill webs and secured to said center floor portion and tie plates and journal boxes secured to said sill webs and supporting said top flanges and side floor portions.

2. In a mine car, sills having vertical webs and oppositely disposed top and bottom flanges, side floor portions secured to said top flanges, tie plates connecting said bottom flanges, means connecting said sill webs and secured to said tie plates, journal boxes secured to said sill webs and supporting said top flanges and side floor portions and bracing means connecting said side floor portions and the bottom flanges of said sills.

3. In a mine car, Z-shaped side sills, axles projecting through said sills, an inverted channel-shaped buffer beam, a central floor portion resting on flanges of said buffer beam and side sills, side floor portions secured to other flanges of said side sills, reinforcing means connecting the central floor, the sills and side floor portions and axle housings connecting said sills and said central and side floor portions.

4. In a mine car, Z-shaped side sills, a central wood floor portion resting on flanges of said sills, axles projected through webs of said sills, side floor portions, means connecting the webs of said side sills with said floor, braces connecting the central and side floor portions and axle housings connecting said side and central floor portions.

5. In a mine car, Z-shaped side sills, central and side floor portions lapping flanges thereof, axles extending through said sills, braces riveted to said side floor portions and bolted to said central floor portion to facilitate removal thereof and axle housings connecting said side and central floor portions.

6. In a mine car, flanged side sills, side floor portions lapping flanges of said sills and riveted thereto, a removable central wood floor in a plane lower than said side floor portions, braces riveted to the side floor portions and bolted to the central wood floor portions to facilitate renewal of said wood floor and axle housings connecting said sills and central and side floor portions.

7. In a mine car, side sills, a removable wood floor therebetween, sheet metal side floor portions permanently connected to flanges of the sills, axles extending above said removable floor, braces permanently connected to the side floor portions and removably connected with the wood floor portion and axle housings connecting said side floor portions and wood floor.

8. In a mine car, side sills, axles projecting through said sills, side floor portions secured directly to said sills, braces extending below and directly connected to said sills and to said floor portions, a removable wood floor between said sills, said removable wood floor extending beneath said axles and axle housings connecting said side floor portions and said wood floor.

9. In a mine car, side sills, axles projecting through said sills, alined side floor portions riveted to and lying substantially in the horizontal plane of the tops of said sills, braces extending below and directly connected to said sills and to said side floor portions, and a removable wood floor between said sills extending beneath said axles.

10. In a mine car, a body having connected stationary side walls and ends each contributing to the support of the other, longitudinally extending sills, a plurality of longitudinally extending planks forming a floor portion, said planks projecting beyond said ends, and axles extending through the sills above said floor portion.

11. In a mine car, a body having connected stationary side walls and ends each contributing to the support of the other, longitudinally extending sills, a plurality of longitudinally extending planks forming a floor portion, said planks projecting beyond said ends, and axles extending through the sills above said floor portion, and transverse members connecting said sills.

12. In a mine car, a body having connected stationary side walls and ends each contributing

to the support of the other, longitudinally extending sills, a plurality of longitudinally extending planks forming a floor portion, said planks projecting beyond said ends, axles extending through the sills above said floor portion, and transverse members connecting said sills, said transverse members being secured to the floor portion.

13. In a mine car, longitudinally extending vertical side portions, transversely extending end portions permanently secured to said side portions, each contributing to the support of the other, longitudinally extending floor portions between said side portions and connected to the lower part of the latter, longitudinally extending sills connected to the inner parts of said floor portions, said sills having a part extending downwardly from the inner side of said floor portions, longitudinally extending planks between said sills, axles extending through said sills above said planks, and transverse members between the sills and adjacent the axles, said transverse members being connected to the longitudinally extending planks.

14. In a mine car, longitudinally extending vertical side portions, transversely extending end portions permanently secured to said side portions, each contributing to the support of the other, longitudinally extending floor portions between said side portions and connected to the lower part of the latter, longitudinally extending sills connected to the inner parts of said floor portions, said sills having a part extending downwardly from the inner side of said floor portions, longitudinally extending planks between said sills, and axles extending through said sills above said planks.

15. In a mine car, sills, longitudinally extending planks resting upon inturned sill flanges, and a buffer beam, said planks being secured to transversely extending members which connect said sill flanges, axles passing through openings in said sills over said planks, and side floor portions which extend horizontally outwardly above said sills.

16. In a railway car, a car body, metallic side floor portions, an intermediate floor portion comprising longitudinally extending planks, axles extending transversely of said planks and above the same, axle hoods lapping said metallic floor portions and above said planks and means connecting said hoods directly to said planks.

17. In a mine car, sills, wood floor planks extending longitudinally of the car, axles above the floor planks and extending through the sills, and plate members extending transversely of the car beneath the axles and secured to the floor planks.

18. In a mine car, side and end walls, sills to which the side walls are connected, a plurality of longitudinally extending planks forming part of a floor between said sills, axles above the floor extending through the sills, and stiffeners secured to the upper surface of the floor and to the sills at points remote from the axles.

19. In a mine car, a body having connected stationary side and end walls each contributing to the support of the other, longitudinally extending sills, ties between said sills, a plurality of longitudinally extending planks between said sills, a metallic floor member serving as a buffer beam, and axles extending through the sills above said floor members.

20. In a mine car, wheels, axles, spaced metallic Z-shaped side sills penetrated by said axles, a pair of axle housings connecting said sills, an angle member intermediate said axles, longitudinally extending planks, and an inverted trough-shaped metallic buffer member intermediate said planks partially supported thereby below said axle housings and said angle member.

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