Sept. 29, 1936. H. IDOINE 2,056,137

FREIGHT CAR FLOOR

Filed July 17, 1933

Fig. 1.

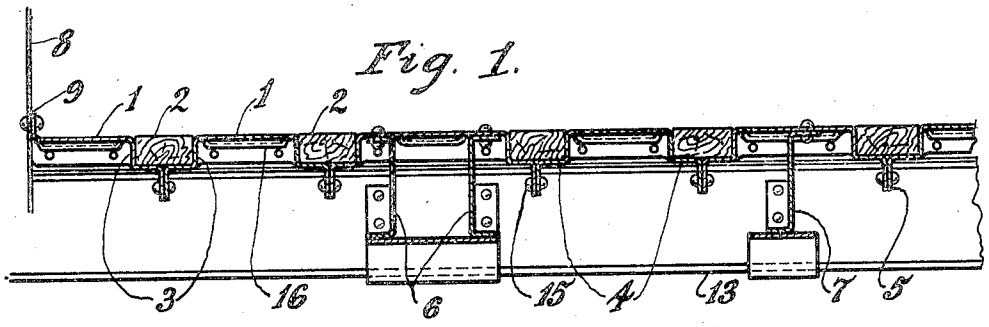


Fig. 2.

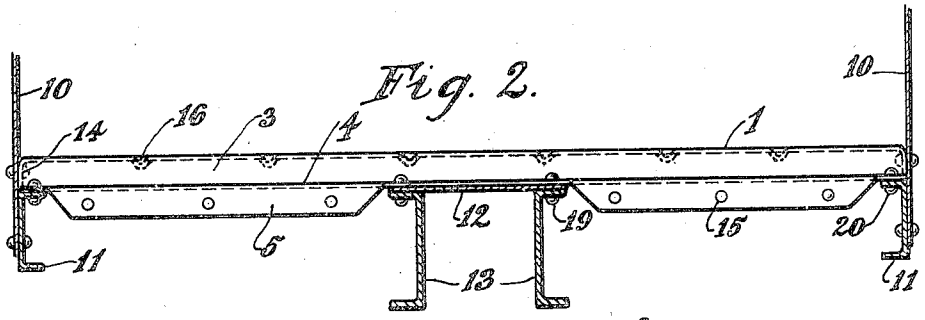


Fig. 3.

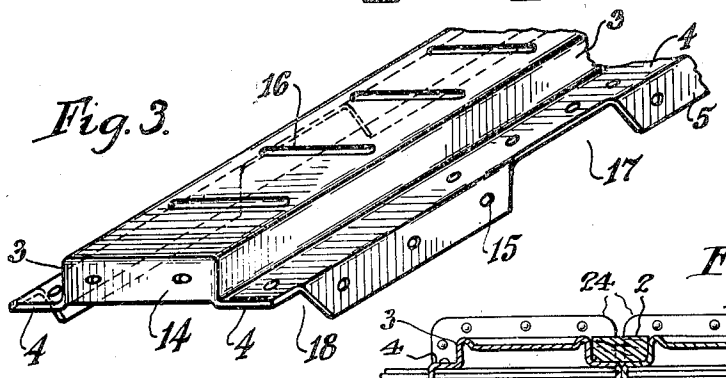


Fig. 5.

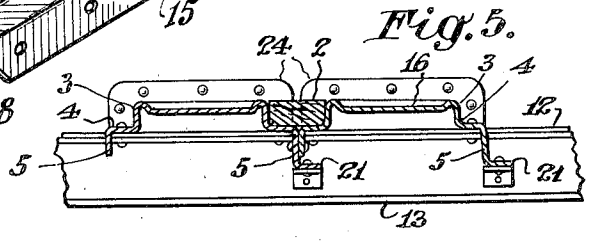
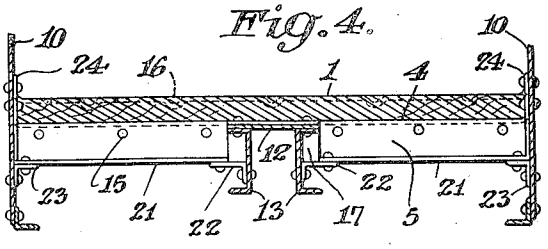


Fig. 4.



Harry Idoine

INVENTOR.

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UNITED STATES PATENT OFFICE

2,056,137

FREIGHT CAR FLOOR

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Application July 17, 1933, Serial No. 680,818

9 Claims. (Cl. 105—422)

My invention relates to the construction of floors for freight cars, and consists of an improved combination of metal and wood.

The object of the improvement is to provide a floor for freight cars formed of metal and having a plurality of closely spaced transverse channels or grooves throughout its length, in which grooves are located transversely disposed wooden members, thus providing the strength and durability of a metal floor with means for nailing or otherwise anchoring cargoes thereto.

A further object is to provide such a floor construction in which the metal floor members are connected to the center and side sills, the bolsters and crossbearers, whereby a very rigid and substantial underframe for the car body is produced.

Another object of the invention is to provide a metal floor member having its side edge portions turned downward and then outward and terminating in downturned flanges arranged to be bolted or riveted to the flanges of similar floor members, forming channels or sunken ledges between adjacent metal floor members adapted to receive and retain wooden floor members.

A still further object is to increase the depth of the downturned flange on one side of each metal floor member and to provide a horizontal flange at the lower edge thereof adapted to be connected at its ends to the center and side sills of the car, this construction being especially desirable where heavy loads are to be carried, such as in gondola cars.

In the accompanying drawing which illustrates my invention,

Figure 1 is a longitudinal section of a box car floor, taken midway of the center sills and sides of the car; Figure 2, a transverse section with the wood plank omitted, showing my improved floor and its method of attachment to the center sills and sides of car; Figure 3 is a perspective view of the metal member; Figure 4 is a transverse section showing my improved flooring as applied to a gondola car; Figure 5 is a longitudinal section showing only two of the metal members and one wooden member as applied to a gondola car.

Referring by numerals to the accompanying drawing, 1 indicates the floor surface of the metal member, which is substantially in the same plane as the floor surface of the wooden member. At 2 is the wooden member which is bolted to the metal member through its horizontal flange 4. At 3, 4, and 5 are the pressed flanges forming the ledge upon which rests the wooden member.

The diaphragms of the body bolster and crossbearer are shown at 6 and 7 respectively, to the upper flanges of which are attached my metal floor member, thus forming a tie plate to connect bolster and crossbearer diaphragms, which are placed on each side of the center sill 13.

The end floor member can be either of metal or wood, if of metal I prefer to attach same to the end sheet 8 by the flange 9, although it is not necessary that flange 9 be turned up as shown, for in some cases it would be preferable that this flange be turned down.

The side sheet and side sills of the box car are indicated at 10 and 11 respectively to which my metal floor member is attached by its flanges 4 and 14. The center sill construction of the car is shown at 12 and 13, on the upper surface of which the lower surface of flange 4 is attached. It is evident that by connecting the two sides of the car and also the center sills with my metal floor member as indicated a very rigid and substantial underframe for the car body is obtained.

The metal members are secured to each other by such riveted or bolted means as shown at 15.

The floor surface of the metal member can be reinforced so that heavy loads being dropped on them will not seriously bend down this surface. I prefer to stiffen same by the pressed ribs indicated by 16, although this can be accomplished by such means as an angle secured to the bottom surface of the metal floor member, the pressed rib will be a less costly fabricating operation.

To permit the metal floor member to be securely connected to the upper surface of the center and side sills at 19 and 20 respectively the bottom vertical flange 5 of the metal floor member is cut away as shown at 17 and 18.

Due to the heavier loads carried in gondola cars than box cars, it is necessary to increase the cross sectional area of the metal member and this is preferably done by deepening the bottom vertical flange 5 shown in Figures 4 and 5, and forming a horizontal flange 21 on its bottom edge, this increased area being secured to the center sills 13 and side sheets 10 by suitable connections as shown at 22 and 23. To secure the metal member to the side sheets of the car the ends of the metal member are flanged upward as shown at 24.

I claim:

1. A freight car floor comprising a metal floor member extending crosswise of the car, said member having end flanges to connect to the sides of the car and having its longitudinal edge portions turned downward and then outward and terminating in downturned flanges connected to

the corresponding downturned flanges of adjacent members and forming therewith channels extending crosswise of the car, wooden members located in said channels, said outturned portions being connected to the top surfaces of a center sill and side sills, the downturned flanges being cut away at the center and ends of the metal member to accommodate the center sill and side sills.

2. A freight car comprising a floor made of metal members each having its longitudinal edge portions turned downward and then outward and terminating in downturned flanges connected to the corresponding downturned flanges of the adjacent metal members, and forming therewith channels extending crosswise of the car, and wooden members located in said channels, the metal members being secured to the sides and center sill of the car.

3. A freight car comprising a floor made of sheet metal plates each having its longitudinal edge portions turned downward and then outward and terminating in downturned flanges connected to the corresponding downturned flanges of adjacent plates, and forming therewith channels, and wooden members located in said channels, said wooden members having their upper surfaces substantially level with the upper surfaces of said sheet metal plates.

4. A freight car floor consisting of a plurality of metal and wooden members extending crosswise of the car, the metal members being secured to the side walls of the car and to the top of the center sill, each metal member having its longitudinal edge portions turned downward and then outward and terminating in downturned flanges connected to the corresponding downturned flanges of adjacent metal members, and forming therewith channels extending crosswise of the car, the wooden members being located in said channels.

5. A freight car floor comprising a center sill, side walls, crossbearers and bolsters, a floor for the same consisting of metal and wooden members extending crosswise of the car, the metal members connecting the side walls and top surface of the center sill, certain of the metal members forming the top tie plates of the bolsters and crossbearers, the metal members being connected together along their longitudinal edges and having channels therein to receive the wooden members.

6. A freight car floor comprising metal and wooden members placed crosswise of the car, the metal members resting on top of the center sill, each metal member having flanges at its ends for connection to the side sheets of the car and having its longitudinal edge portions turned downward and then outward and then downward to form flanges connected to the corresponding downturned flanges of adjacent members, and forming therewith channels extending crosswise of the car to receive the wooden members, one of the downturned flanges on each metal member terminating in a horizontal reinforcing flange underlying the wooden members, and brackets for connecting said horizontal reinforcing flanges to the center sill and sides of the car.

7. A freight car floor including a plurality of metal members extending crosswise of the car, each member having its longitudinal edge portions turned downward and then outward and terminating in downturned flanges connected to the corresponding downturned flanges of adjacent members, and forming therewith channels extending crosswise of the car, and wooden members located in said channels.

8. A freight car floor including a plurality of metal members extending crosswise of the car, each member having its longitudinal edge portions turned downward and then outward and terminating in downturned flanges connected to the corresponding downturned flanges of adjacent members, and forming therewith channels extending crosswise of the car, and wooden members located in said channels, one of said downturned flanges being deeper than the other flange and having an outwardly extending flange at its lower edge.

9. A freight car floor construction including a center sill and side sills having their upper surfaces located in substantially the same horizontal plane, bolsters and crossbearers carried by said sills and having their upper surfaces located in a higher horizontal plane than the upper surfaces of the sills, transversely disposed metal floor members having their longitudinal edge portions turned downward and then outward and terminating in downturned flanges, and forming, with adjacent metal floor members, transverse channels, and wood floor members located in said channels, the central portions of some of said metal floor members resting upon and secured to the bolsters and crossbearers, and the channel portions of all of said metal floor members resting upon and secured to the sills.

HARRY IDOINE.