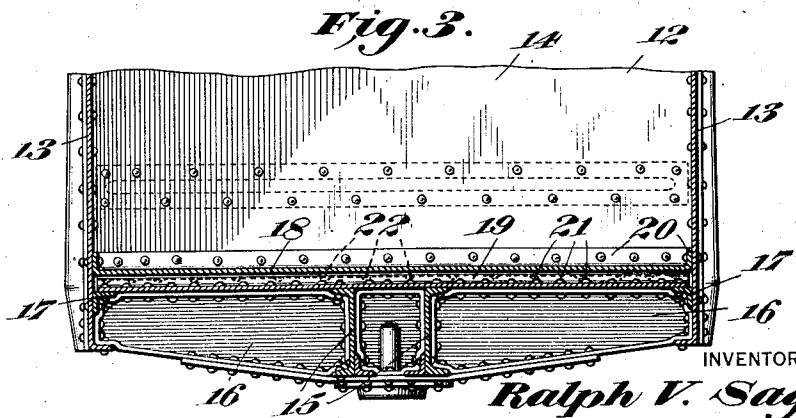
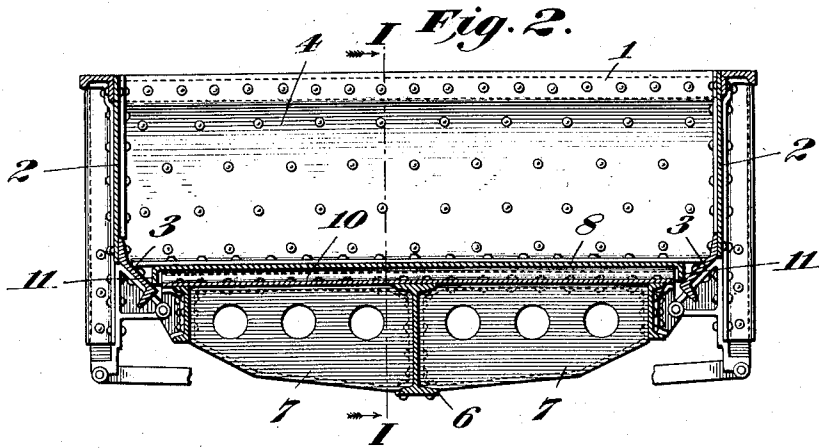
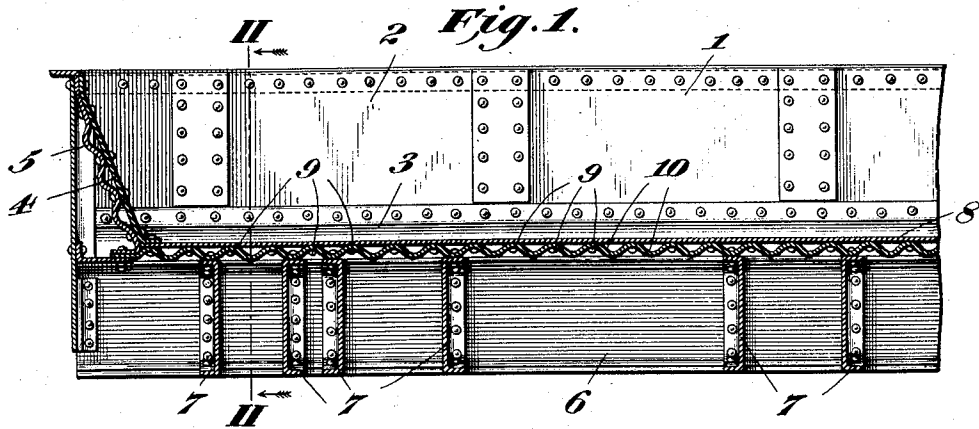


R. V. SAGE.
CAR CONSTRUCTION.
APPLICATION FILED DEC. 18, 1919.

1,388,896.

Patented Aug. 30, 1921.



BY

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CAR CONSTRUCTION.

1,388,896.

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To all whom it may concern:

Be it known that I, RALPH V. SAGE, a citizen of the United States, and a resident of the city of Philadelphia, county of Philadelphia, and State of Pennsylvania, whose post-office address is Philadelphia, Pennsylvania, have invented certain new and useful Improvements in Car Construction; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to railway cars and more particularly to the manner of constructing the lower portions and floor of the car.

One of the objects of my invention is to provide a simple, strong and economical construction for a car floor. With this object in view I construct the floor of the car of a corrugated plate which is secured to the car underframe and extends from end to end of the car with a flat plate on top of the corrugated plate to make a smooth surface for more easily discharging the lading. With this arrangement which is a cellular construction, the floor plates can be made from comparatively thin material and will be stronger and less expensive than the single thickness of heavy flat floor plates that are now in use. A floor of this type is also especially desirable for carrying hot material such as ashes or cinder and the like, as the heat would not tend to weaken or distort the floor as much as would be the case in an ordinary floor.

A further object of my invention relates to forming the walls of the car with an inner flat plate riveted to a corrugated outer plate.

Another object of my invention relates to the construction of the bottom chord member of the car side of a rolled flanged shape similar to a Z-bar with one of the flanges at substantially a right angle to the web and the other at an obtuse angle thereto and attached to the bottom of the plate girder car side in such a manner as to serve as a shedding plate for the car. Other objects of my invention will appear hereinafter.

Having thus given a general description of my invention, I will now, in order to make the same more clear, refer to the ac-

companying sheet of drawings forming part 55 of this specification, in which:—

Figure 1 is a vertical longitudinal sectional elevation through a portion of a dump car taken on the line I—I of Fig. 2; Fig. 2 is a vertical transverse sectional elevation of a car taken on the line II—II of Fig. 1; and Fig. 3 is a vertical transverse sectional elevation through a portion of another form of car illustrating the application of my invention thereto. 60

Referring now to the numbers of reference on the drawings and especially to Figs. 1 and 2 of the drawings:—1 indicates the car body as a whole of the tilting side-dumping gondola type having plate girder 65 sides 2 with a bottom chord member 3 of substantially Z-bar shape, but with one of the flanges at a right angle to the web and the other at an obtuse angle thereto and riveted to the lower edge of the plate girder 70 car side and forming a shedding plate adapted to discharge the lading from the car. The end wall of the car is made of an inner flat plate 4, provided with a flange on the lower edge, and an outer corrugated 75 plate 5, also provided with a flange on the lower edge. The flat plate 4 and the corrugated plate 5 are riveted together with the flanges thereof extending in opposite directions and the flanges are riveted to the car floor. 6 indicates the center sill of the car having outwardly extending cross bearers 7 upon which is mounted and riveted the corrugated floor stiffening plate 10 which supports the thin flat floor plate 8, which latter 80 has bent-down edges 11, and is secured to the corrugated floor stiffening plate 10 by means of the rivets 9. 85

Referring now to Fig. 3 of the drawings, 12 indicates the body of another form or 95 non-tilting gondola car, having plate girder sides 13 with a lower chord member 17 and end 14, with channel center sill 15 and cross bearers or bolsters 16 over which is laid the corrugated plate 19 which is secured by 100 means of the rivets 21, and this also supports the flat floor plate 18, which flat plate has upwardly flanged edges 20 attached to the plate girder sides and to the end of the car and is secured to the corrugated plate by 105 the rivets 22.

A car floor constructed in the manner above described is especially desirable for

carrying any hot waste materials, such as ashes, cinder, blast furnace slag or the like, as the plates are thin and will expand and contract easily without weakening the floor and keep cool by reason of the cellular construction.

While I have shown and described my invention in considerable detail, I do not wish to be limited to the exact details of construction specified, but may use such substitutions, modifications or equivalents thereof, as are embraced within the scope of my invention, or as pointed out in the claims.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. A car underframe, a transversely corrugated plate supported thereby, and a flat plate extending over the corrugated plate.
2. A car underframe, a transversely corrugated plate secured thereto, and a flat plate extending over and secured to the corrugated plate.
3. A car underframe, a transversely corrugated plate extending over and secured to the car underframe, and a flat plate extending over and secured to the corrugated plate.
4. A car underframe, a transversely corrugated plate extending from end to end of the car over and secured to the car underframe, a flat plate extending over and secured to the corrugated plate, and a flange extending from the edge of said flat plate.
5. In a car construction, an end wall comprising an outer corrugated plate and an inner flat plate secured together and to the car body, said corrugated plate having a lower integral out-turned flange secured to the car underframing.
6. A car end wall comprising a corrugated outer plate and a flat inner plate secured together and to the car body, said corrugated plate having a lower integral out-turned

flange secured to the car underframing, the flat plate having a lower integral in-turned flange secured to the car bottom plate.

7. A car end wall comprising a transversely corrugated outer plate and a flat inner plate secured together and to the car body, said corrugated plate having a lower integral out-turned flange secured to and near the end of the car underframing, the flat plate having a lower integral in-turned flange secured to the car bottom plate.

8. A car end wall comprising a transversely corrugated outer plate and a flat inner plate disposed in an inclined position and riveted together, the lower edges of the corrugated plate and the flat plate having flanges bent in opposite directions and secured to the car floor.

9. In a car, a plate girder side, a bottom chord member therefor, of substantially Z-shape in cross section, having a central web portion with flanged edges secured by one of said flanged edges to the plate girder side, the web portion of the said member being inclined inwardly from the plate girder side and forming a shedding plate adapted to discharge the lading thereover.

10. In a car, a plate girder side, a bottom chord member therefor, of substantially Z-shape in cross section, having a central web portion with flanged edges, one of the flanged edges being disposed at right angles to the web of the Z-bar while the other flanged edge is disposed at an obtuse angle to the web of the Z-bar and attached to the lower edge of the plate girder side, the web portion of the bottom chord member being inclined inwardly from the plate girder side and forming a shedding plate.

In witness whereof I hereunto affix my signature.

RALPH V. SAGE.