

W. J. ROBIDER.
GRAIN CAR.
APPLICATION FILED DEC. 9, 1920.

1,422,133.

Patented July 11, 1922.

4 SHEETS—SHEET 1.

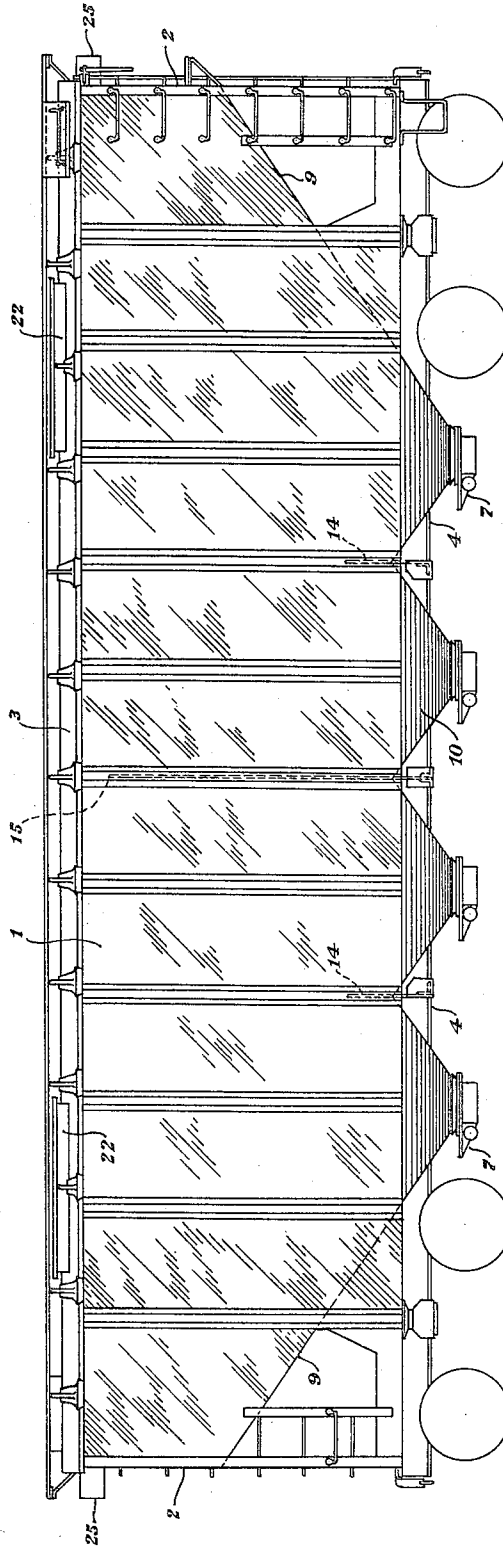


FIG. 1

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4 SHEETS—SHEET 2.

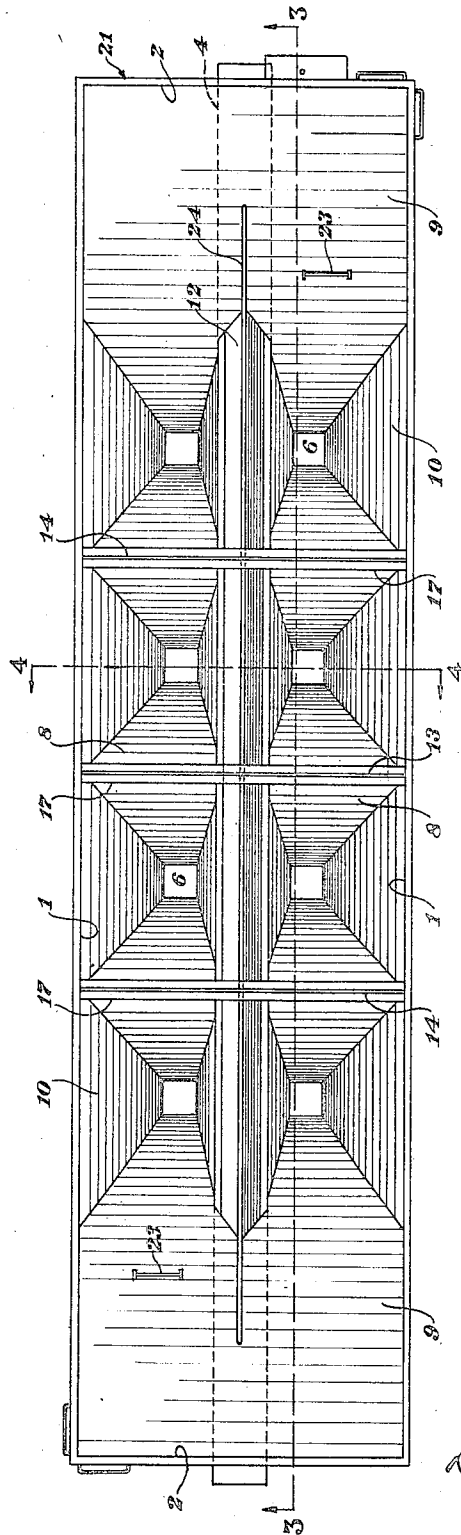


FIG. 2

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4 SHEETS—SHEET 3.



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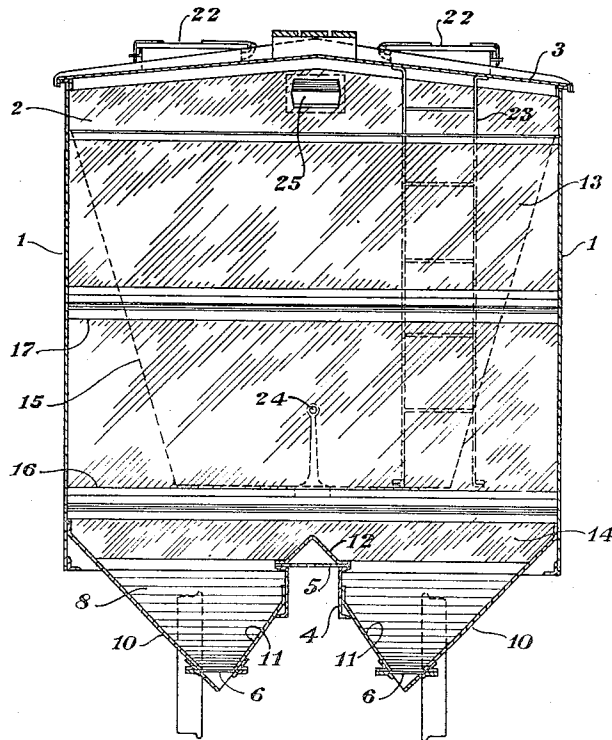


FIG. 4

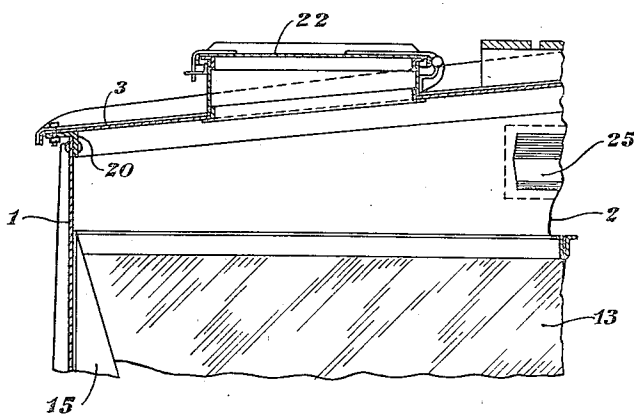


FIG. 5

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UNITED STATES PATENT OFFICE.

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GRAIN CAR.

1,422,133.

Specification of Letters Patent.

Patented July 11, 1922.

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To all whom it may concern:

Be it known that I, WILLIAM J. ROBIDER, a citizen of the United States, residing at Westmount, in the Province of Quebec and Dominion of Canada, have invented a new and useful Improvement in Grain Cars, of which the following is a specification.

This invention relates to improvements in railway cars and more particularly to an all metal car, that is especially adapted to carry grain, but may be used as well for other articles.

It often occurs that it is necessary to transport grain for a long distance over rough road beds which makes it extremely difficult for a box car of wooden construction adapted to carry grain to make such a trip without an appreciable part of the cargo being jolted out. It is an object of this invention to construct a car for this purpose having a plurality of hoppers on its under side and a metal roof that is removable so the car can be used, as well for transporting coke, sugar beets or other articles of similar size.

While the preferred form of this invention is illustrated upon the accompanying sheets of drawing, yet it is to be understood that minor detail changes may be made without departing from the scope thereof.

In the drawings:

Figure 1 is a view in side elevation of a car constructed in accordance with this invention.

Figure 2 is a top plan view of Figure 1, with the roof removed.

Figure 3 is a view in longitudinal section taken on the line 3—3 of Figure 2.

Figure 4 is a view in transverse section taken on the line 4—4 of Figure 2.

Figure 5 is an enlarged detail view in transverse section taken on the line 5—5 of Figure 3.

The embodiment of this invention as illustrated comprises a car having side walls 1, ends 2 and roof 3 constructed from sheets of metal, with a center sill 4 formed from channel irons the tops of which are connected with the cover plate 5. This invention relates to the particular construction of the car body and its interior arrangement and may be supported above the running gear in any desired manner. The bottom of the car body is provided with a plurality of equally spaced depending hoppers preferably four in number correspondingly ar-

ranged on each side of the center sill with each hopper terminating in a discharged opening 6 provided with a sliding gate valve 7. The transverse downwardly inclined walls 8 of the hoppers on the corresponding sides are arranged parallel to each other with the adjacent meeting walls forming equal angles and the portions 9 of the inclined walls of the end hoppers extended in the same plane to the car end. The longitudinal walls of the hoppers are inclined downwardly at a greater angle than the transverse walls with the outer walls 10 on the same side extending in the same plane from the side of the car in a line above the meeting of the adjacent transverse walls and the inner walls 11 on the same side extending in the same plane from the center sill in a line below in the meeting of the adjacent transverse walls. As the center sill 4 enters the interior of the car between the hoppers, an angular diverting plate 12 is placed over the interior portion of the cover plate 5.

The interior of the car is equally divided by a transverse partition 13 extending from side to side and from between the two middle hoppers to adjacent the top of the side and is further divided by baffle-plates 14 extending from side to side and from between the remaining adjacent hopper walls to a distance above the diverting plate 12. To strengthen the side of the car to withstand the weight of the contained load angular gusset plates 15 are secured to the car sides and to the intermediate baffle-plates 14 and to further strengthen the car body two sets of transverse braces are provided, with the lower braces 16, secured on each side of the gussets 15 and baffle-plates 14 and partition 13 passing above the diverting plate 12 and the upper set 17 arranged intermediate the height of the car body, and secured on each side of the gussets 15 and middle partition 13.

The side and end plates 20 and 21 are preferably formed with angle irons to which the eaves of the metal roof 3 are detachably secured as clearly illustrated in Figure 5. Hatches 22 are provided in the roof on each side adjacent each end. To provide ready access to the interior of the car ladders 23 are provided at the hatches and a longitudinal hand rail 24 is supported above the diverting plate 12, as shown. Ventilators 25 are also provided in each end wall under the ridge of the roof.

It has been demonstrated that cars constructed in this manner are ready loaded with grain and will retain the load without loss in traveling long distances over rough road beds.

The transverse middle partition does not interfere with the loading or discharge of the car and the arrangement of baffle-plates acts to give stability to a load of this character. The shape of the hoppers allows of a complete discharge of the grain by its own weight. While this car is constructed primarily to transport grain, the construction is particular adaptable to the transportation of other granular substances and by removing the roof it may be readily loaded with coke, sugar beets, or other articles of like size, without the necessity of further strengthening or bracing the side walls when it is desired to remove the car roof or to load with a cargo other than grain.

What I claim is:

1. In a railway car having metal sides and ends, a metal center sill, a plurality of metal hoppers correspondingly arranged on each side having longitudinal walls inclined downwardly from the car sides and center sill, and transverse walls inclined downwardly at a lesser angle with the adjacent meeting edges forming equal angles and having discharge openings and closures at the bottom, a metal partition extending from side to side and from between the adjacent walls of the middle hoppers to near the top of the sides and a removably mounted metal roof.

2. In a railway car having metal sides and ends, a metal center sill, a plurality of metal hoppers correspondingly arranged on each side having longitudinal walls inclined downwardly from the car sides and center sill, and transverse walls inclined downwardly at a lesser angle with the adjacent meeting edges forming equal angles and having discharge openings and closures at the bottom, a metal partition extending from side to side and from between the adjacent walls of the middle hoppers to near the top of the sides, baffle-plates of lesser height extending from side to side and from between the adjacent walls of the other hoppers, and a removably mounted metal roof.

3. In a railway car having metal sides and ends, a metal center sill, a plurality of metal hoppers correspondingly arranged on each side having longitudinal walls inclined downwardly from the car sides and center sill, and transverse walls inclined downwardly at a lesser angle with the adjacent meeting edges forming equal angles and having discharge openings and closures at the bottom, a metal partition extending from side to side and from between the adjacent walls of the middle hoppers to near the top of the sides, baffle-plates of lesser height ex-

tending from side to side and from between the adjacent walls of the other hoppers, gusset plates extending upward from said baffle-plates and secured to the car sides, and a removably mounted metal roof.

4. In a railway car having metal sides and ends, a metal center sill, a plurality of metal hoppers correspondingly arranged on each side having longitudinal walls inclined downwardly from the car sides and center sill, and transverse walls inclined downwardly at a lesser angle with the adjacent meeting edges forming equal angles and having discharge openings and closures at the bottom, a metal partition extending from side to side and from between the adjacent walls of the middle hoppers to near the top of the sides, baffle-plates of lesser height extending from side to side and from between the adjacent walls of the other hoppers, gusset plates extending upward from said baffle-plates and secured to the car sides, and a diverting plate upon the center sill within the car body.

5. In a railway car having metal sides and ends, a metal center sill, a plurality of metal hoppers correspondingly arranged on each side having longitudinal walls inclined downwardly from the car sides and center sill, and transverse walls inclined downwardly at a lesser angle with the adjacent meeting edges forming equal angles and having discharge openings and closures at the bottom, the walls of the end hoppers extending in the same planes to the ends of the car.

6. In a railway car having metal sides and ends, a metal center sill, a plurality of metal hoppers correspondingly arranged on each side having longitudinal walls inclined downwardly from the car sides and center sill, and transverse walls inclined downwardly at a lesser angle with the adjacent meeting edges forming equal angles and having discharge openings and closures at the bottom, a metal partition extending from side to side and from between the adjacent walls of the middle hoppers to near the top of the sides, baffle-plates of lesser height extending from side to side and from between the adjacent walls of the other hoppers, gusset plates extending upward from said baffle-plates and secured to the car sides, transverse braces secured to the car sides and on both sides of the baffle-plates, middle partition, and gussets above the diverting plate.

7. In a railway car having metal sides and ends, a metal center sill, a plurality of metal hoppers correspondingly arranged on each side having longitudinal walls inclined downwardly from the car sides and center sill, and transverse walls inclined downwardly at a lesser angle with the adjacent meeting edges forming equal angles and having discharge openings and closures at the bottom, a metal partition extending from

side to side and from between the adjacent walls of the middle hoppers to near the top of the sides, baffle-plates of lesser height extending from side to side and from between the adjacent walls of the other hoppers, gusset plates extending upward from said baffle-plates and secured to the car sides, a diverting plate upon center sill within the car body, transverse braces secured to the car sides on both sides of the baffle-plates, middle partition, and gusset plates adjacent the diverting plate, a second set secured to the car sides on each side of the gussets and middle partition thereabove.

8. In a railway car having metal sides and ends, a metal center sill, a plurality of metal hoppers correspondingly arranged on each side, having longitudinal walls inclined downwardly from the car sides and center sill, and transverse walls inclined downwardly at a lesser angle with the ad-

jacent meeting edges forming equal angles and having discharge openings and closures at the bottom, and a removably mounted metal roof, having hatches on each side adjacent to each end and a ladder depending from one hatch at each end.

9. In a railway car having metal sides and ends, a metal center sill, a plurality of metal hoppers correspondingly arranged on each side, having longitudinal walls inclined downwardly from the car sides and center sill, and transverse walls inclined downwardly at a lesser angle with the adjacent meeting edges forming equal angles and having discharge openings and closures at the bottom, and a removably mounted metal roof, having hatches on each side adjacent to each end and a ladder depending from one hatch to each end, a longitudinal hand rail supported above the diverting plate.

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