April 5, 1927. 1,623,303

R. W. BURNETT

RAILWAY CAR

Filed May 31, 1923

Fig. 1.

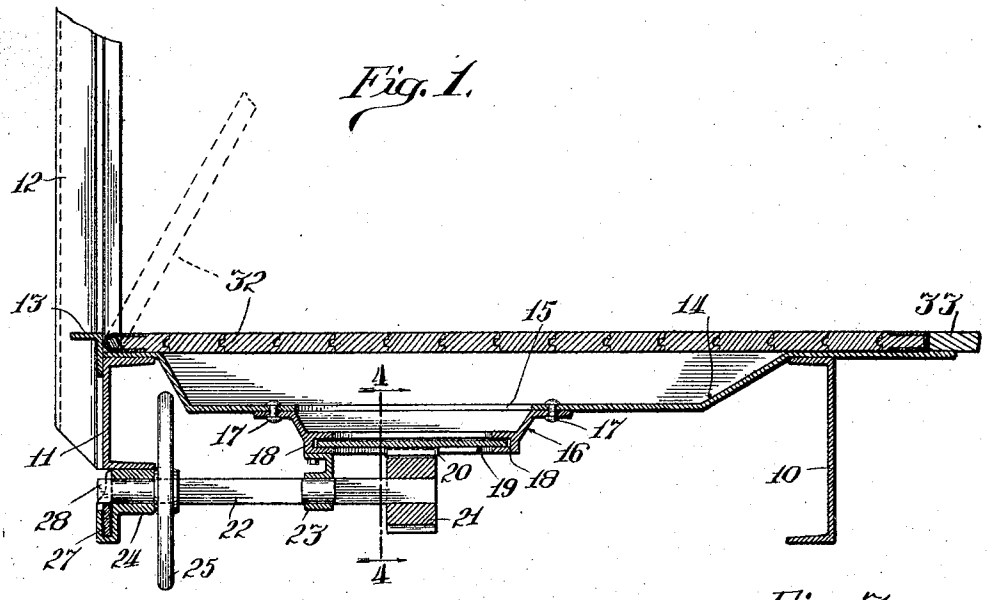


Fig. 2.

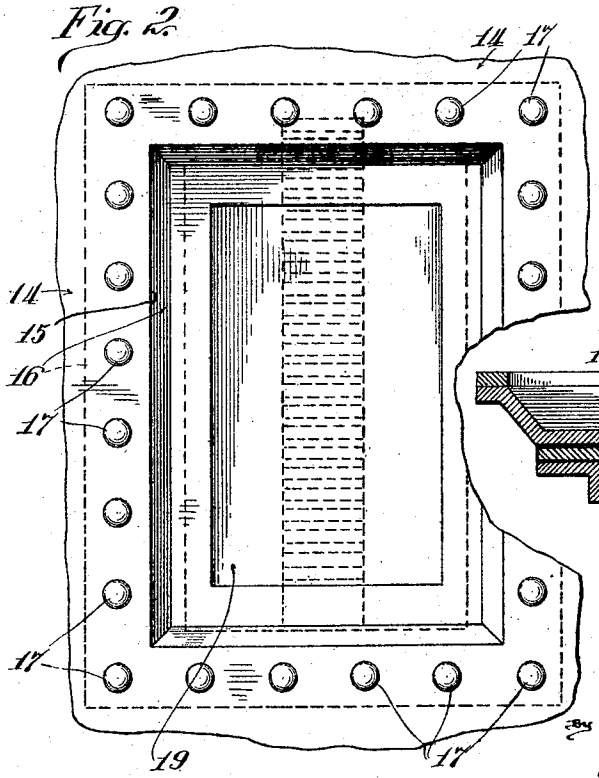


Fig. 3.

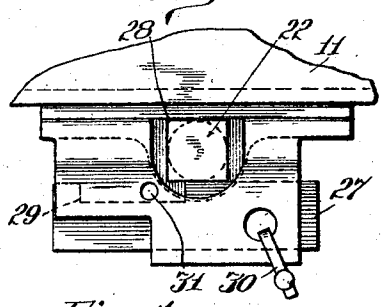
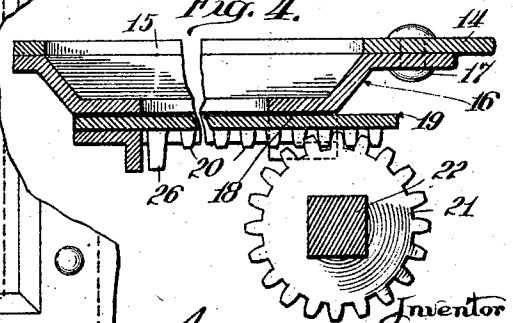


Fig. 4.



Inventor

Richard W. Burnett

Barnett & Fellman

Attorneys

Patented Apr. 5, 1927. 1,623,303

UNITED STATES PATENT OFFICE.

RICHARD W. BURNETT, OF CHICAGO, ILLINOIS.

RAILWAY CAR.

Application filed May 31, 1923. Serial No. 642,600.

My invention relates to hopper bottom cars of the box car type, and it has for its principal object the provision of a new and improved form and arrangement of parts by which a car can be used alternatively to very good advantage either as a dump car for the transportation of grain, coal, sand or like material, or as a box car for the transportation of commodities which it is necessary to place in position and unload by hand.

It is another object of my invention to improve devices of this type in sundry details hereinafter pointed out. The preferred means by which I have accomplished my several objects are illustrated in the drawing and are hereinafter specifically described.

That which I believe to be new and desire to cover by Letters Patent is set forth in the claims.

In the drawing—

Fig. 1 is a fragmentary vertical sectional view through one side portion of the floor of a car, transversely of the car, showing my improved construction.

Fig. 2 is a top plan view of certain of the parts shown in Fig. 1, but with the hinged floor closure turned up out of position.

Fig. 3 is a side view of certain of the parts as seen from the left in Fig. 1; and

Fig. 4 is an enlarged detail view, being substantially a section taken on line 4—4 of Fig. 1.

Referring to the drawings, in which corresponding parts are indicated by the same reference characters, 10 indicates one of the center sills and 11 one of the side sills of a car. 12 indicates the door post of any approved type for the doorway at one side of the car, and 13 indicates the tread or sill of the doorway, being shown in the form of an angle iron.

For the purpose of providing for the ready unloading of grain, coal or any such product, from the car, I have provided one or more hoppers, preferably one at each side of the car between the side doors. For this purpose a sub-flooring is provided consisting of a plate or structure of sheet metal with depressions formed therein at opposite sides of the center sill 10, one of such depressions constituting a hopper 14, being illustrated in Fig. 1. An opening 15 is provided through the bottom of hopper 14 at each side of the car, with a frame 16 in the form of a metal casting secured by rivets 17 about the opening 15. As shown in Fig. 1, the frame 16 is provided with grooves 18 at its opposite sides extending longitudinally of the car, for slidably supporting a door 19, preferably in the form of a heavy cast plate, for closing the opening 15.

As is best shown in Fig. 4, the plate 19 is provided with a series of teeth 20 cast integrally therewith on its lower face, meshing with a pinion 21 carried by a transverse shaft 22. The shaft 22 is mounted in a bearing 23 depending from the frame 16, and a bearing 24 depending from the side sill 11. The shaft 22 is also provided with a hand wheel 25 keyed or otherwise fixed thereon, for rotating the shaft to move the door 19 longitudinally of the car through the medium of the pinion 21. At the end of the rack formed by the teeth 20, a lug or long tooth 26 is provided adapted by engagement with the pinion 21, to limit the longitudinal movement of the door 19.

For locking the shaft 22 against rotation and thus holding the door 19 closed, I have provided a key 27 (see Fig. 3) slidably mounted in a longitudinally extending keyway formed as a part of bearing 24. The key is adapted by engagement with a squared portion 28 of the shaft to hold the shaft against rotation. When it is desired to rotate the shaft, the key is moved longitudinally to bring a notch 29 formed in its upper edge into position opposite the shaft. For holding the key 27 in locking position, the key and the wall portions of the pocket containing the key are provided with openings therethrough for the reception of a car seal 30 or other suitable securing means. A pin 31 serves to hold the key 27 from withdrawal from the bearing 24.

By the means above described, a very substantial floor is provided for the car, the joints between the frame 16 and the door 19 being such as to prevent the escape of grain or other small articles. When, however, it is desired to unload the car, this can be accomplished to very good advantage by the opening of the door 19, as above described.

For closing the side doorway of the car, without the necessity for nailing strips to the door posts as is often done when box cars are to be used for hauling grain, I have provided a closure 32 hinged at its lower

edge at the doorway. 33 designates a similar closure at the other side of the car. With these closures turned upwardly and latched in vertical position, they provide supplemental or grain doors, some such means being ordinarily employed in addition to the usual side doors when the car is loaded with bulk freight of a granular character. When the car is used for other purposes, the closures are turned down into horizontal position, as shown in Fig. 1, and serve as part of the car flooring to cover the hoppers; the upper faces of the closures 32 and 33 in this position being preferably flush with the upper surface of the remaining portions of the floor of the car.

The guideways or grooves 18 in the frame 16 and, in fact, the entire back edge of the frame is open so that there can be no clogging of the supporting frame in the door 19 which would prevent the door from closing. If the door did not close accurately the openings for the car seal might not register.

I claim:

1. A railway car having an opening through the floor thereof, a door formed of metal slidably mounted in position to close said opening, teeth formed on said door, a pinion meshing with said teeth, a shaft connected with said pinion for rotating it to move the door, a key slidably mounted adjacent to said shaft and adapted when in operative position to prevent rotation of the shaft, and releasable means for locking the key in position.

2. A railway car having an opening through the floor thereof, a door formed of metal slidably mounted in position to close said opening, teeth formed on said door, a pinion meshing with said teeth, a shaft connected with said pinion for rotating it for moving the door, a key slidably mounted adjacent to said shaft adapted by engagement with a flat face portion of the shaft to hold the shaft against rotation and provided with a notch which can be brought slidably into position opposite the shaft for permitting rotation of the shaft, and an opening through the key for the insertion of a car seal for holding the key in locking position.

3. In a railway car, the combination with the flooring of the car having a movable section, a hopper located under said movable floor section and formed with a discharge opening, a sliding closure for said opening, an operating shaft for moving said closure, and a key for holding said shaft from rotation.

4. In a railway car, the combination with the flooring of the car having a movable section, a hopper located under said movable floor section and formed with a discharge opening, a sliding closure for said opening, an operating shaft for moving said closure, a key for holding said shaft from rotation, and means for sealing the key in its locking position.

5. In a railway car, the combination of a hopper having a discharge opening in the bottom, a sliding closure therefor provided on the under side with a rack, an operating shaft having a pinion meshing with said rack, a hand-wheel on said shaft arranged at one side of the hopper, said shaft being formed with a flat surface, and a notched key adapted to engage the flat surface of the shaft to hold the same from rotation.

6. In combination with the side and center sills of a railway car, a hopper supported between said sills and formed with a discharge opening, a structure formed with longitudinally extending guides and secured to said hopper under the opening therein, a closure slidable in said guides formed with a rack, bearings on said structure and side sill, an operating shaft in said bearings provided at its inner end with a pinion to mesh with said rack and near its outer end with a hand wheel, the outer end of said shaft being formed with a flat surface, a guide-way on the outer bearing for the shaft, and a recessed key in said last named guide-way adapted to engage the flat surface on said shaft, said key and guide-way being formed with openings adapted to register for a seal.

RICHARD W. BURNETT.