May 3, 1927. 1,627,256

L. F. SMITH

COAL CAR

Filed March 1, 1926 2 Sheets-Sheet 1

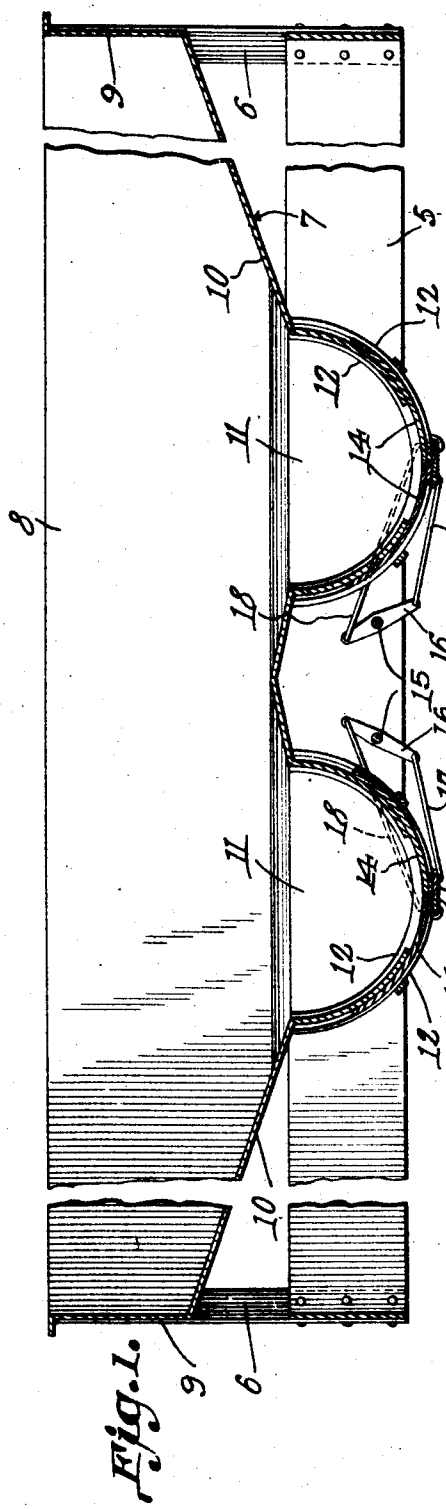


Fig. 1.

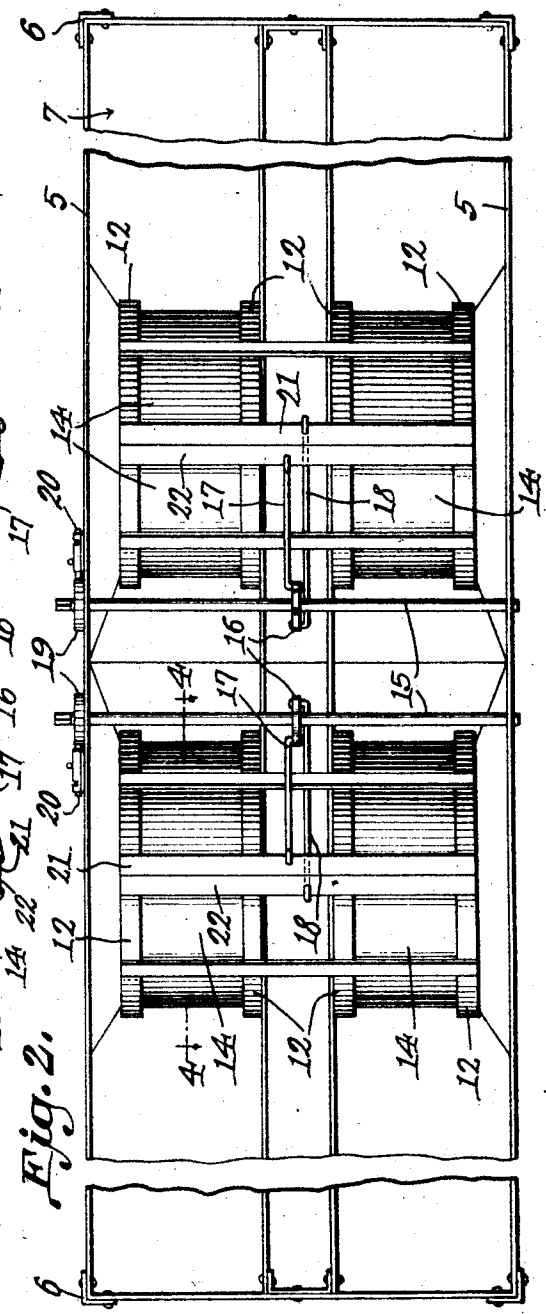


Fig. 2.

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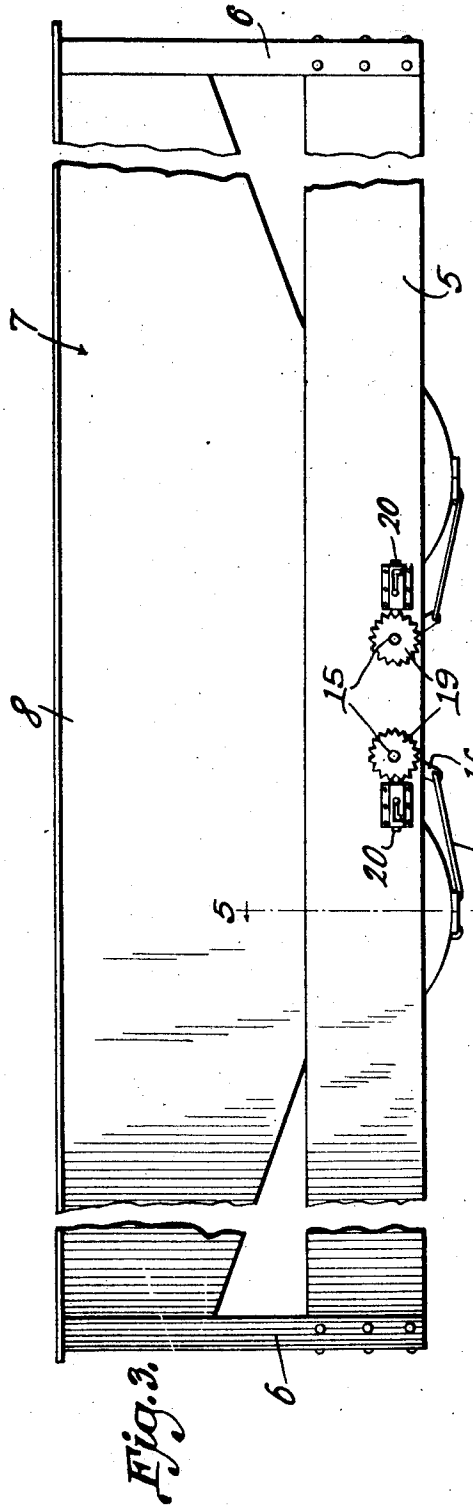


Fig. 3.

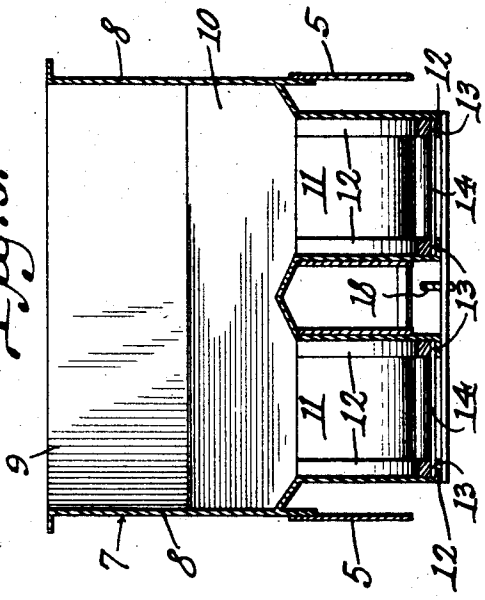


Fig. 5.

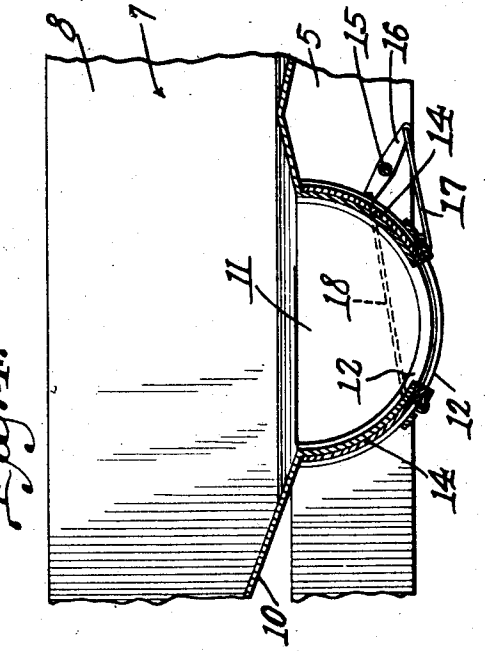


Fig. 4.

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Patented May 3, 1927. 1,627,256

UNITED STATES PATENT OFFICE.

LAWRENCE F. SMITH, OF HAZARD, KENTUCKY, ASSIGNOR OF ONE-EIGHTH TO LOYD P. LARKIE, AND ONE-EIGHTH TO AUSTEN FAULKNER, CHRISTOPHER C. DALE, AND ALVIS MERCER, ALL OF HAZARD, KENTUCKY.

COAL CAR.

Application filed March 1, 1926. Serial No. 91,578.

This invention relates to railway rolling stock, and more particularly to cars of the hopper bottom type, the primary object of the invention being to provide means for securing the closures of the car in their closed positions to insure against the closures being jarred open to release the coal carried therein.

Another important object of the invention is to provide means whereby the bulk of the weight or the material contained in the car will be supported by the bottom of the car relieving the sliding closures of the hoppers of the car of excess weight.

A still further object of the invention is the provision of means whereby the doors may be manually moved to their open positions, and moved to their closed positions by gravity.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed, may be made within the scope of what is claimed, without departing from the spirit of the invention.

Referring to the drawings:

Figure 1 is a longitudinal sectional view through a car constructed in accordance with the invention.

Figure 2 is a bottom plan view thereof.

Figure 3 is a side elevational view of a car embodying my invention.

Figure 4 is a sectional view taken on line 4—4 of Figure 2 but showing the doors in open position.

Figure 5 is a sectional view taken on line 5—5 of Figure 3.

Referring to the drawings in detail, the car embodies the usual frame which includes side members 5 and end members 6 which support the body indicated generally by the reference character 7.

The body portion includes side members 8, end members 9 and inclined bottom plates 10, which bottom plates are curved downwardly providing hoppers 11 through which the coal or material passes when discharged from the car.

Associated with the hoppers are curved guide bars 12 spaced apart to provide grooves for the reception of the ends 13 of the sliding closures 14, whereby said closures are supported for free sliding movement.

Thus it will be seen that due to this construction and the weights of the parts when the closures 14 are moved to their open positions to allow material to discharge from the car, the closures will automatically return, by gravity, to their closed positions.

The operating mechanism includes spaced, horizontally disposed rods 15 which are mounted between the side members 5 and to which cross arms 16 are connected, the cross arms having their ends formed with openings to receive the rods 17 and 18 respectively, the rods 18 being connected with one of the closures, while the rods 17 are connected with the closures associated with the first mentioned closures.

As clearly shown by the drawings, the rods 17 and 18 will move simultaneously in opposite directions, moving the closures to either their open or closed positions.

Suitable operating handles not shown are provided on the outer ends of the rods 15 whereby the rods 15 may be rotated, there being provided ratchet wheels 19 on the rods 15 and adapted to cooperate with the sliding bolts 20 that are mounted on the body portion to the end that when the bolts 20 are moved into engagement with the ratchet wheels, the ratchet wheels will be held against movement and the doors or closures held in their closed positions.

Thus it will be seen that it would be impossible for the weight of the material contained within the car to force the doors or closures to their open positions and release the load, and that the only way the closures may be moved to their open positions is by rotating the rods 15 in a manner as described.

It will also be obvious that due to the curved construction of the closures and hoppers of the bottom the bulk of the load will be supported by the bottom of the car and the material which is usually supported by the hinged closures of a hopper bottom car will be supported by the curved walls of the hoppers and only small portions of the material will rest on the closures 14.

It might be further stated that it is contemplated to use four of these discharge

hoppers in the bottom of the usual hopper bottom car, the hoppers being arranged in pairs.

As illustrated by Figure 2, the bars 21 and 22 connect the closures of adjacent hoppers to which bars the rods 17 and 18 are connected to the end that one rod 15 will act to operate the closures of adjacent hoppers.

I claim:

1. In a car of the class described, a bottom, a plurality of hoppers forming a part of the bottom, said hoppers having curved walls, curved members arranged adjacent to the curved walls and forming grooves with the curved walls, sliding closures curved to conform to the curvatures of the hoppers, said sliding closures having their ends positioned within the grooves, and means for moving the closures to their open positions.

2. In a car of the class described, a bottom including inclined bottom plates, said bottom plates having their adjacent edges curved downwardly and inwardly providing hoppers, the adjacent edges of the plates being spaced to provide outlet openings, and sliding closures for normally closing the openings.

3. In a car of the class described, a bottom including inclined plates having their inner ends spaced apart and curved downwardly and inwardly defining a discharge spout, curved closures engaging the curved ends of the plates and mounted for sliding movement over the curved ends of the plates, and an operating means for moving the closures to their open or closed positions.

4. In a car of the class described including a bottom formed of inclined plates having their adjacent edges spaced apart and curved to provide a discharge spout, curved closures resting against the curved ends of the plates and operating over the curved ends of the plates for controlling the passage of material through the discharge spout, a horizontal rod disposed adjacent to the spout, an arm secured to the rod, links connected with the ends of the arm and with the closures to move the closures to their active or inactive positions, and means for restricting movement of the rod.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature.

LAWRENCE F. SMITH.