May 6, 1930. W. L. BURNER 1,757,038

DUMP CAR

Filed June 5, 1926 2 Sheets-Sheet 1

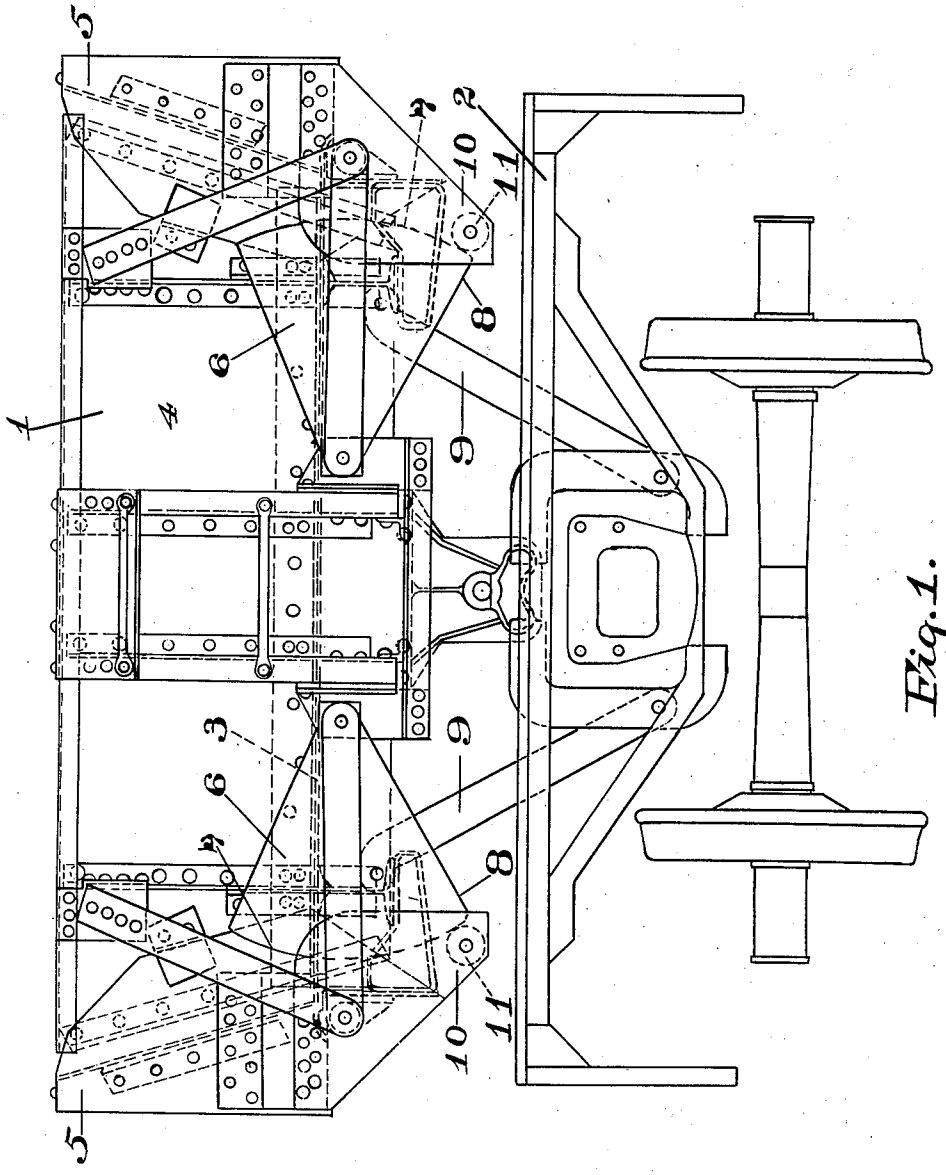


Fig. 1.

WITNESSES

William Dinning.
Lillian Busha.

INVENTOR

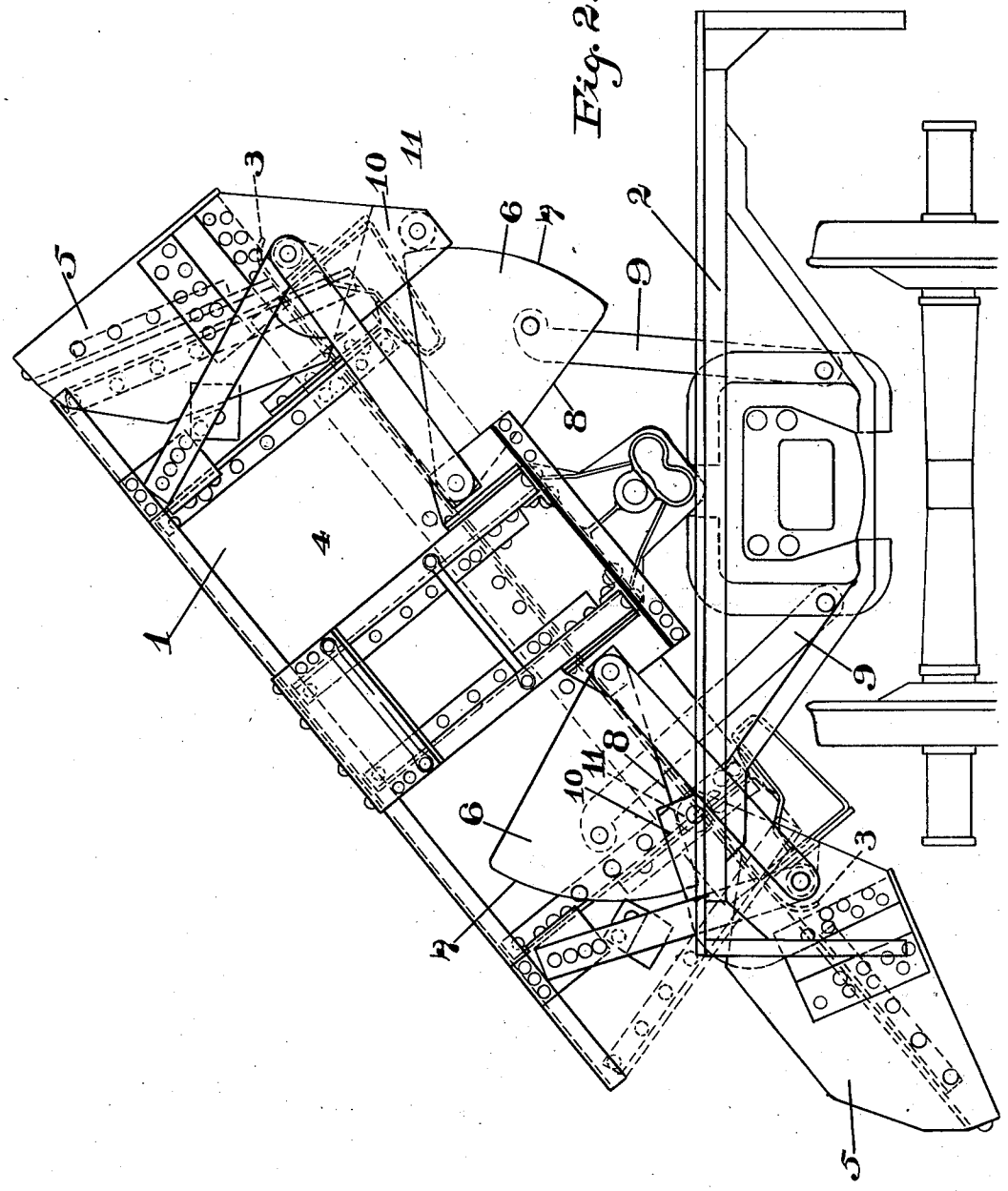
William L. Burner,
by G. P. Lambe, Atty.

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Fig. 2.



WITNESSES

William Dinning.

Lillian Basha.

INVENTOR

William L. Burner,

by G. C. Lambe, Atty.

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UNITED STATES PATENT OFFICE

WILLIAM L. BURNER, OF KOPPEL, PENNSYLVANIA, ASSIGNOR, BY MESNE ASSIGNMENTS, TO PRESSED STEEL CAR COMPANY, OF PITTSBURGH, PENNSYLVANIA, A CORPORATION OF NEW JERSEY

DUMP CAR

Application filed June 5, 1926. Serial No. 113,847.

This invention relates to railway dump cars of the tilting body type having outwardly swinging sides or side doors for discharging lading substantially clear of the track rails, and has for an object the provision of means for permitting the side or door at one side of the car to open outwardly by gravity when the body is tilted in the direction of this door, and to close the door when the body is being righted and further to maintain the door in its closed position when the body is tilted in the opposite direction.

Another object of the invention is to provide the tilting body of a dump car, having a side wall or door at each side hinged at or near its lower edge and adapted to swing outwardly to open position, with means for permitting the door or side wall on the lowering side of the body to move by gravity to its open position, while a similar means at the opposite or rising side of the car will maintain the door or side wall on this rising side of the car closed.

These and other objects will be apparent from the following description.

Referring to the drawings in which like reference characters refer to like parts, Fig. 1 is an end elevational view of a car embodying the invention, the body being shown in its righted position and Fig. 2 is a like view showing the body tilted to one side to its dumping position.

Referring now in detail to the drawings the reference character 1 indicates a dump car body which may be of any suitable construction and which is tiltably mounted on an underframe 2 which may also be of any suitable construction. In the present embodiment of the invention the body is tiltable toward one side or the other, but it will be understood that the invention may be embodied in a car in which the body is tiltable toward one side only. The body 1 preferably comprises a floor 3, ends 4 and side walls or side doors 5 which side walls or doors are hinged at or near their lower edges to the floor supporting framing of the body. These doors are adapted to swing outwardly and downwardly and when in open position each one is adapted to form an extension of the floor 3 to direct the discharge of the lading clear of the track rails.

At both ends of both doors mechanisms, which are independent of each other, are provided for operating and controlling the doors. Each one of these mechanisms comprises a segmental member 6 which is pivotally mounted adjacent its inner end to the adjacent end wall 4 and at its outer end is provided with an outwardly curved surface 7, such surface being joined with a substantially flat surface 8 on the underside of the member 6. To this member 6 there is pivotally connected one end portion of a member 9, the other end portion of such member being pivotally connected with the underframe. Each one of the doors is provided at both of its ends with downwardly depending arms 10, each of which has mounted thereon a roller 11 which is adapted to contact with the surfaces 7 and 8 of the member 6. When the body is in its righted position the rollers 11 are in engagement with the lower end portions of the surfaces 7 of the members 6 and thus hold the doors or sides in their closed or load retaining positions.

Assuming that the car body is being tilted to the left side from its righted position as shown in Fig. 1 toward its tilted position as shown in Fig. 2, the operations of the mechanisms are as follows:—As the body tilts toward the left, the links 9, on the left hand side of the body and at both ends of the door on this side of the body, will prevent the members 6 to which they are connected from moving downwardly more than a predetermined distance with the body. It will here be noted that in the car illustrated in the drawings the body tilts and moves sidewise and that the members 6 will move sidewise with the body and at the same time will move a short distance downwardly. The door on the left hand side of the body moves downwardly with the body and when the body has moved a short distance relative to the members 6 the rollers 11 on the arms 10 which have been in engagement with the surfaces 7 will engage the surfaces 8, thus permitting the top of the door to move outwardly and

downwardly by gravity, until the body has been fully tilted. As the opposite side of the body rises in the tilting movement, the links 9 maintain the members 6 on this side of the body in their proper positions so that the outer surfaces 7 thereof are in engagement with the rollers 11 on the arms 10 of the door, thus holding the door on this side of the car closed during the entire tilting movement.

When the body is being righted the rollers 11, being in engagement with the surface 8 of the members 6 at the left hand side of the car and these members being held down by the links 9, will cause the door to move to its closed postion, and as the body reaches its righted position the rollers 11 will engage the surfaces 7 causing the door to be locked against outward movement until the body is again tilted in the direction. As the opposite side of the body descends the rollers 11 on the arms 10 of the door on this side of the body remain in contact with the surfaces 7 of the members 6, thus this door is kept in its closed position during the tilting and righting of the body as just described. It will be understood that when the body is tilted toward the right hand side of the car the operations of the mechanisms are the reverse of those just described.

Having thus described the invention what I claim as new and desire to secure by Letters Patent is:—

1. In a dump car, an underframe, a body tiltably mounted on said underframe, a door hinged adjacent its lower edges to said body, said door in its closed position forming a side wall for said body, a downwardly depending arm on said door, a member pivotally mounted on the end wall of said body having surfaces with which said arm cooperates to control the opening movement of said door when the body is being tilted and to close said door when said body is being righted, and means for maintaining said member in its proper position relative to said body.

2. In a dump car, an underframe, a body tiltably mounted on said underframe, a door hinged to said body, said door in its closed position forming a side wall for said body, a member pivotally mounted on the end wall of said body adapted to be engaged by said door to control said door throughout its opening and closing movement when said body is being tilted and righted and maintain said door in closed position when the body is elevated.

3. In a dump car, an underframe, a body tiltably mounted on said underframe, a door hinged to said body and forming a side wall therefor, a member pivotally connected with the end wall of said body, said member having a curved end surface, and an arm on said door adapted to engage said surface to hold said door closed when said body is in its righted position.

4. In a dump car, an underframe, a body tiltably mounted on said underframe, a door hinged to said body, a roller on said door below said hinge, a member pivotally connected with said body and having a surface adapted to be engaged by said roller to maintain said door in its closed position, and a surface on said member adapted to be engaged by said roller to control the opening movement of said door when the body is being tilted.

5. In a dump car, an underframe, a body tiltably mounted on said underframe, a hinged door for said body adapted to swing outwardly by gravity toward its open position when said body is being tilted and means for controlling the opening movement of said door, said means comprising a member loosely mounted on the end of said body, means for maintaining said member in operative position and means on said door for loosely engaging said member.

6. In a dump car, an underframe, a body tiltably mounted on said underframe, a hinged door for said body adapted to swing outwardly by gravity toward its open position when said body is being tilted, an extension on said door, a shaped member mounted on the end of said body engaged by said extension, and means for maintaining said member in its operative position, said extension being adapted to follow a portion of the contour of said member to control the opening movement of said door.

7. In a dump car, an underframe, a dump body mounted on said underframe, side doors for said body hinged adjacent their lower edges to said body and adapted to open outwardly by gravity as the car body is tilted, downward depending members on said doors engaging door operating arms pivotally mounted on said body, and a member mounted on said underframe engaging each door operating arm intermediate the point of engagement with the door and attachment to the car body to cause said arm to rotate in the opposite direction to the rotating righting body to force said open door closed.

8. In a dump car, an underframe, a body tiltably mounted on said underframe, a side door hinged adjacent its lower edge to said car body, a downward depending member on said door, a rotatably mounted member on the end of said body having rolling contact with said door member, and a member pivotally mounted on said underframe and secured to said body member causing said body member to rotate during the movement of said dumping body to permit the opening and positively force said open door closed.

In testimony whereof I affix my signature.

WILLIAM L. BURNER.