

DUMP CAR.

Patented Dec. 19, 1911.

3 SHEETS—SHEET 1.

Fig. 1.

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DUMP CAR.

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3 SHEETS-SHEET 2.

1,012,044.

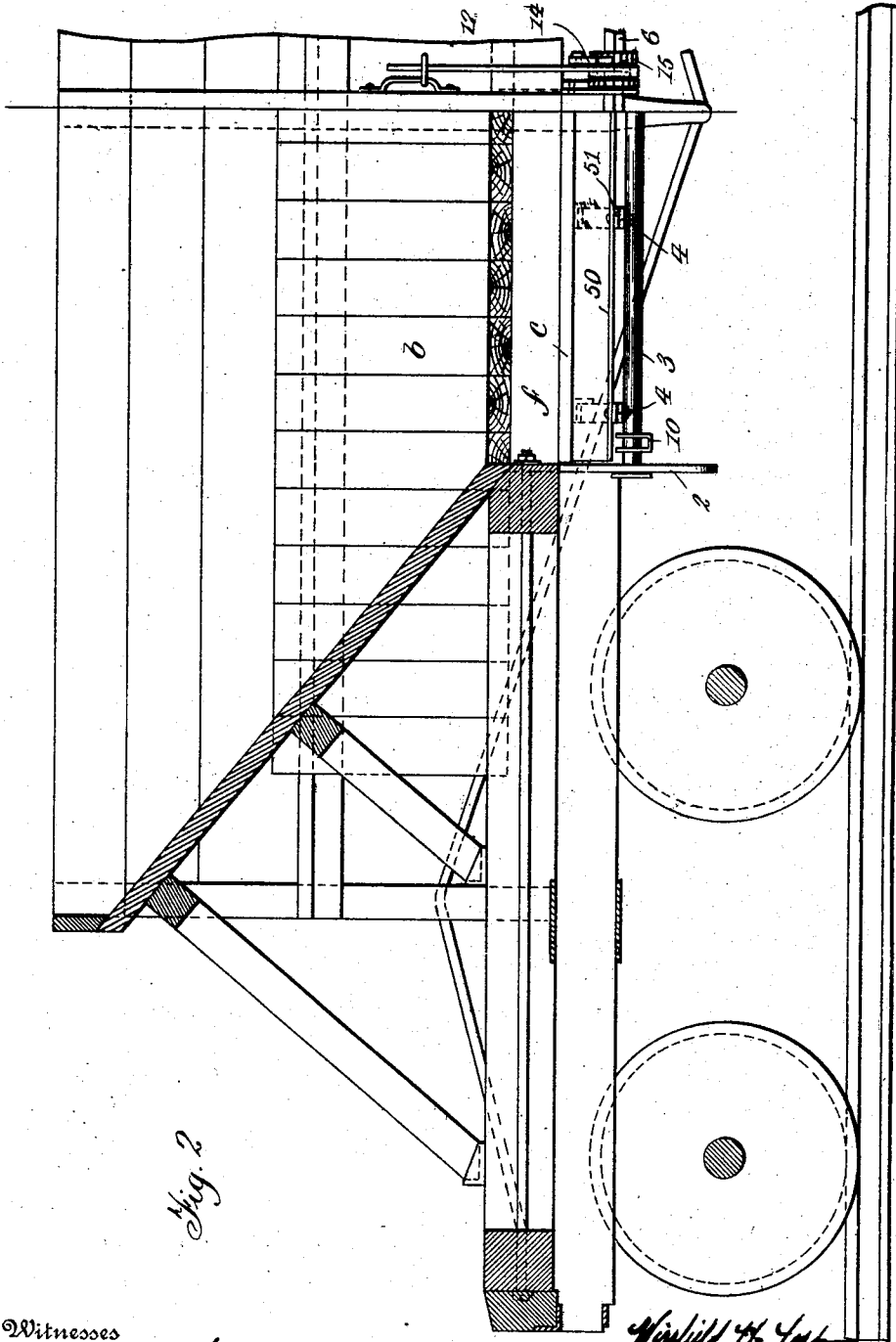


Fig. 2

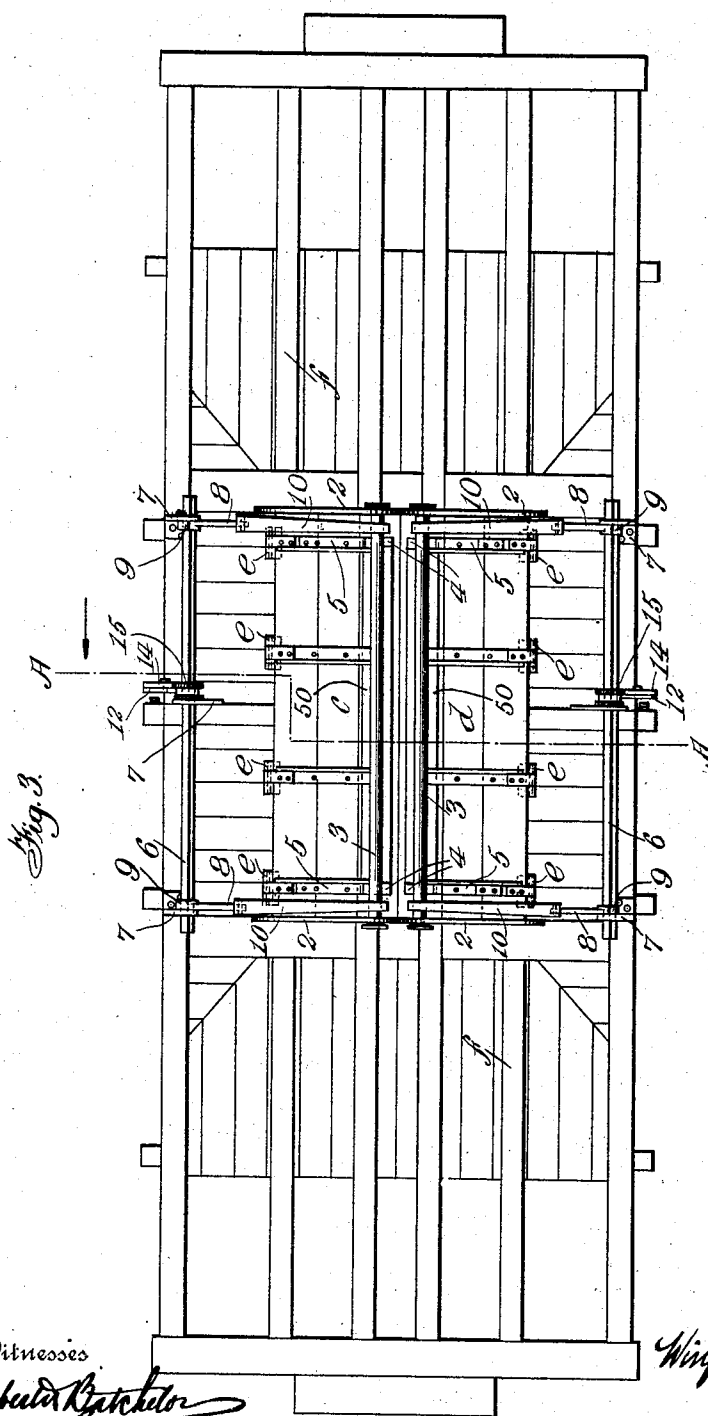
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UNITED STATES PATENT OFFICE.

WINFIELD HANCOCK YOST, OF MONTREAL, QUEBEC, CANADA, ASSIGNOR TO NATIONAL DUMP CAR COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF MAINE.

DUMP-CAR.

1,012,044.

Specification of Letters Patent.

Patented Dec. 19, 1911.

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To all whom it may concern:

Be it known that I, WINFIELD HANCOCK YOST, of the city of Montreal, Province of Quebec, Canada, have invented certain new and useful Improvements in Dump-Cars; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention relates particularly to dump cars of the type having fixed bodies presenting a single hopper-like discharge opening and gravity discharge doors hinged to the side edges of the said opening and the invention may be said to consist of the construction, combination, and particular arrangement of parts hereinafter described and pointed out in the claims. For full comprehension, however of my invention, reference must be had to the accompanying drawings forming a part of this specification, in which similar reference characters indicate the same parts and wherein—

Figure 1, is a transverse vertical sectional view of a car constructed according to my invention, the section being taken on line A A Fig. 3; Fig. 2 is a longitudinal vertical sectional view of one end of the car; and Fig. 3 is a plan view of the underside of the car, drawn to a smaller scale.

The car has an open top and its body *b* is in the form of a hopper with a single discharge opening controlled by double doors *c, d*, hinged as at *e* to the longitudinal sills *f* forming the sides of such discharge opening. The free ends of the doors are supported through the medium of two pairs of aligned and oppositely inclined shaft supporting rails 2 located at the opposite ends of the discharge opening and being straight throughout the length of their shaft bearing portions, such rails also serving as a part of the door operating means as will be presently pointed out. A pair of laterally movable shafts 3 are supported on these rails and, for the purpose of raising the doors and positively locking them in closed position, these shafts coact with bearing members fixed upon the doors and consisting of rails secured at their opposite ends respectively to the undersides of the doors and to Z-bars 50 secured to the doors near their free ends and extending from side to side thereof, filler blocks 51 affording clearance for pitmen to be presently further al-

luded to. These rails present angular tread surfaces inclining as at 4 from the vicinity of the free edge of the door away from the door surface at a slight angle, and then, as at 5, at a sharper angle inwardly toward such door surface, the part 4 being so disposed that when the door is closed this part 4 and the corresponding portion of the shaft supporting rail converge outwardly in a small degree. By outwardly I mean toward the free edge of the door. The laterally movable shafts 3 are actuated through the medium of a pair of operating shafts 6 supported in bearings 7 secured to the frame of the car, a pair of crank arms 8 having square eyes 9 fitting onto the shafts 6, and two pairs of pitmen 10 to the outer ends of which latter such arms are pivotally connected, the opposite ends of the pitmen being connected to the shafts 3. The means for rotating the shafts 6 comprise levers 12 fulcrumed on the shaft and carrying operating pawls 14 adapted to engage ratchet wheels 15 fixed upon the shafts, detent pawls 16, engaging ratchet wheels 17 also mounted upon the shaft, serving to prevent retrograde rotation of the ratchet wheels.

Operation: The doors are supported and retained in closed position by the shafts 3 exerting a wedging action between the converging portions of the rails 2 and bearing portions 4 on the outer faces of the doors. To dump the load the shafts must first be forced from their positions between the converging faces by swinging the operating pawls to the positions relative to the ratchet wheels 15 indicated in dotted lines at the left of Fig. 1 and working the levers 12 in a manner to rotate the shafts 6 in the direction indicated by arrow 100, and thereby, by means of crank arms 8 and pitmen 10, moving the shafts 3 under the sharply inclined portions of the rails on the doors and permitting the latter to open precipitately, falling away from each other and hanging from the side edges of the door opening.

The doors are closed by operating the levers and rotating the shafts 6 in a direction indicated by arrow 110 to move the shafts 3 laterally toward the center of the car and cause them to act upon the rails 5 and raise the doors to closed position, and as the pitmen complete their stroke the shafts are wedged between the surfaces 4

and the corresponding portions of the supporting rails thus tightly closing and locking the doors.

What I claim is as follows:—

5 1. The combination with a dump car provided with a discharge opening, of a door hinged at the side of such discharge opening, rails located at the ends of the said opening, a laterally movable shaft supported on the rails, a bearing member fixed
10 upon the door and presenting an angular tread surface a part whereof is inclined away from the door surface at a slight angle and another part at a sharper angle inwardly toward such door surface, the
15 first mentioned part and the corresponding part of the coacting supporting rail converging slightly when the door is closed and means for moving the shafts laterally along the supporting rails and into successive engagement with the said oppositely
20 inclined tread surfaces, for the purpose set forth.

2. A dump car presenting a single longitudinal discharge opening; a pair of
25 doors hinged at the side edges of such opening; rails located at the ends of the said opening; a pair of laterally movable shafts supported on the rails; bearing members fixed upon the doors and each presenting
30 an angular tread surface a part whereof is inclined away from the door surface at a slight angle and another part at a sharper angle inwardly toward such door surface, the first mentioned part and the corresponding
35 part of the coacting supporting rail converging slightly outwardly when the door is closed; and means for moving the said shafts laterally.

40 3. A dump car presenting a single longitudinal discharge opening; a pair of doors hinged at the side edges of such opening; rails located at the ends of the said opening; a pair of laterally movable shafts supported on the rails; bearing members fixed
45

upon the doors and consisting of rails each presenting an angular tread surface a part whereof is inclined away from the door surface at a slight angle and another part at a sharper angle inwardly toward such door surface, the first mentioned part and the corresponding part of the coacting supporting rail converging slightly outwardly when the door is closed; a pair of operating shafts; crank arms fixed upon said operating shafts; pitmen connecting the crank arms to the laterally movable shafts; and means whereby the said operating shafts are rotated.

4. A dump car comprising a body portion of hopper form with open top and presenting a single longitudinal discharge opening; a pair of doors hinged at the side edges of such opening; two pairs of aligned and oppositely downwardly inclined rails located at the ends of the said opening; a pair of laterally movable shafts supported on the rails; bearing members fixed upon the doors and consisting of rails each presenting an angular tread surface a part whereof is inclined away from the door surface at a slight angle and another part, at a sharper angle inwardly toward such door surface, the first mentioned part and the corresponding part of the coacting supporting rail converging slightly outwardly when the door is closed; a pair of operating shafts; crank arms fixed upon said operating shafts; pitmen connecting the crank arms to the slidable shafts; and means whereby the said operating shafts are rotated.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

WINFIELD HANCOCK YOST.

Witnesses:

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