

V. E. SISSON.

DUMP CAR.

APPLICATION FILED MAY 16, 1907.

Patented Aug. 15, 1911.

2 SHEETS—SHEET 1.

1,000,446.

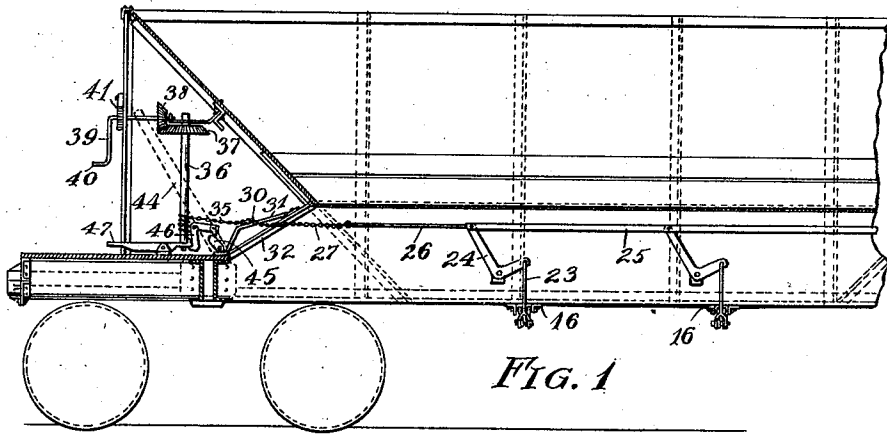


FIG. 1

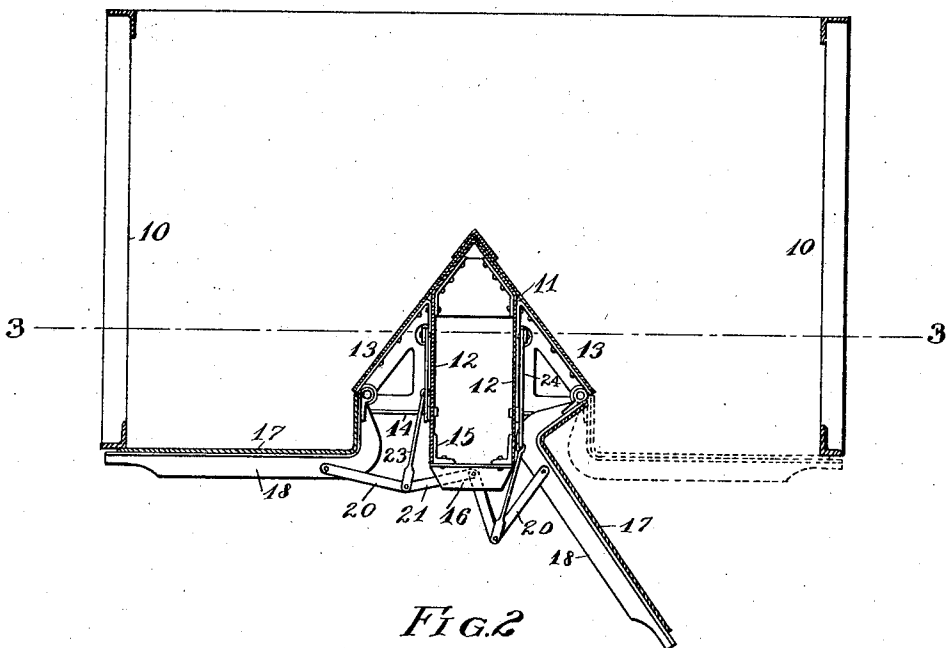


FIG. 2

WITNESSES: 1

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DUMP-CAR.

1,000,446.

Specification of Letters Patent. Patented Aug. 15, 1911.

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To all whom it may concern:

Be it known that I, VINTON E. SISSON, a citizen of the United States, residing at Webster Groves, in the county of St. Louis and State of Missouri, have invented a certain new and useful Improvement in Dump-Cars, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

10 This invention relates to dump cars wherein there are a plurality of dumping doors, the object being to provide raising mechanism for such doors arranged to include compensating mechanism so that the two doors may be raised together by the movement of a single driving mechanism while this same driving mechanism may operate either door independently. Thus, if one door should be left closed, or in closing should become caught by material clogging in its opening, the other door may be brought home and secured. Furthermore, should there be any stretching or want of adjustment of the raising mechanism as applied to either door, my compensating mechanism enables both doors to be still brought into closed position by the single driving mechanism.

30 My raising mechanism is well adapted for use on cars of the Ingoldsby type, wherein there is a central longitudinal member to which dumping doors are hinged, which are substantially horizontal when closed, extending outwardly to the car sides. The invention is shown herein as applied to such type of car, and more particularly to that kind of Ingoldsby car which is shown in application No. 335,352, filed Sept. 20th, 1906, by Frank S. Ingoldsby. In such car there is an individual raising mechanism for the doors on each side of the central beam, this raising mechanism being operated by a longitudinal tension member. In applying my invention to this car, I connect each of these two tension members with a yoke and connect the mid-point of the yoke with the winding mechanism proper. The result of my yoke connection is that if doors on both sides are down, when the winding mechanism is operated, the yoke pulls both raising mechanisms equally, raising the two doors. As soon as the movement of one door is stopped, either by its coming into position,

or being blocked by material between it and the car side, any further movement of that end of the yoke connected therewith is stopped, and the continued movement of the raising mechanism causes the yoke to swing around such end as a pivot, pulling on the other raising mechanism until the door connected therewith is brought into final position. The mechanism and operation is hereinafter more fully explained.

The drawings clearly disclose my invention applied to a car of the type mentioned.

65 Figure 1 is a sectional side elevation of a portion of such car. Fig. 2 is a cross section. Fig. 3 is a plan in section, being substantially on the plane indicated by the line 3—3 of Fig. 2. Fig. 4 is an end view of the car.

70 As shown in the drawings, 10 represents the sides of the car, and 11 the central longitudinal member, which is shown as composed of vertical plates 12, a surmounting ridge 13, bracing members 14 between the outer sides of the plates and the ridge, reinforcing angles 15 extending along the lower edges of the plates 12, and cross braces 16 secured to the angles 15.

80 The dumping doors are designated 17. They are pivoted to the central member and extend outwardly and abut against the under edges of the car sides. As shown, these doors extend downwardly some distance from their pivots before they extend outwardly.

85 The raising mechanism shown comprises toggle links 20 and 21 (connected respectively to a floor beam 18 of the door, and to a cross brace 16) links 23 leading upward from the knuckle of this toggle, bell cranks 24 to which the links are connected, and longitudinal tension member connected with the upper end of the bell cranks. The bell cranks are pivoted at their elbows on the outer sides of the vertical plates 12. The longitudinal tension member comprises, as shown the bars 25 and 26 and the chain 27. With such a structure, if a pull be given to the chain 27, the door is forced upwardly. When in its horizontal position, the door is held by suitable means, not shown. I connect the two chains 27 on opposite sides of the plates 12 to the ends of a yoke 30 which normally rests on a pair of straps or chairs 31 secured to the angle iron stiffeners 32 at

the inclined ends of the plates 12. The midpoint of this yoke is suitably connected with the driving mechanism. Thus from this midpoint leads a chain 35 to a winding shaft 36, which has a bevel gear 37 with which meshes a pinion 38, on a crank shaft 39,—the hand crank 40 on this shaft furnishing means for rotating it and hence winding in the chain. 41 represents a suitable ratchet and pawl to secure the gain accomplished in winding. It will be seen that this winding mechanism, drawing the yoke along the chains 31, pulls on both chains 27 and raises doors on both sides of the car so long as they are free to move. But as soon as either door is stopped, the continued winding pulls solely on the movable door, bringing it into position. Thus, if only the door or doors on one side of the car are dropped, my winding mechanism may serve to raise such side, as well as when doors on both sides are dropped. Furthermore, if both doors are dropped, and in the raising of them, one becomes seated first, or becomes caught, the winding may continue, bringing the other door into final position.

Fig. 3 shows in full lines the position of the yoke when the doors are closed; in dotted lines, the position of the yoke when both doors are open; and furthermore, in dotted lines, in diagonal direction, the position of the yoke when one door alone is dropped.

As heretofore stated, when in final position, the doors are held by suitable means, not shown. The lever 44, shown in dotted lines in Fig. 1, is to be taken as a representation of any means which may operate the door holding mechanism, as is well understood. This lever in the embodiment shown, is mounted on a rock shaft 49 on which is a short arm 45, this arm standing beneath a pawl on a bell crank 46, which serves to normally hold in position a lever 47, which lever supports the shaft 36 with its gear 37 in mesh with the pinion 38. As the lever 44 is thrown to release the doors, its first movement swings the bell crank 46 which releases the lever 47, allowing the shaft 36 and gear 37 to drop, thus disengaging that gear from its pinion and preventing the crank being thrown violently around when the doors drop.

Having thus described my invention, I claim:

1. In a dump car, the combination of a plurality of sets of dumping doors, individual raising mechanisms for the different sets including members under tension during the raising, a yoke connected with said members, a winding shaft, and connecting mechanism between the winding shaft and the yoke.

2. In a dump car, the combination of a central longitudinal member, dumping doors hinged thereto, a pair of door raising mechanisms carried by the central longitu-

dinal member and having tension members extending along the same, a movable yoke located approximately at the end of the central longitudinal member and crossing it and having its ends connected with the tension members of the door raising mechanism, and mechanism for moving the midpoint of the yoke.

3. In a dump car, the combination of dumping doors, raising mechanism adapted to push upward on the undersides of said doors, said raising mechanism adapted to operate the doors conjointly, or a less number independently, whereby improper operation of one door will not interfere with the closing of the other.

4. In a dump car, the combination of a plurality of dumping doors, raising mechanism therefor adapted to push upward on the under side of said doors, said raising mechanism having a common operating member, and compensating mechanism included in the raising mechanism to allow the doors to be raised conjointly, or independently if some of the doors stop short of their closed position.

5. In a dump car, the combination of a plurality of dumping doors, a plurality of individual raising mechanisms therefor, said raising mechanisms adapted to push upward on the under sides of said doors, a common operating mechanism for the raising mechanism, and compensating mechanism connecting the operating mechanism with the individual raising mechanisms.

6. In a dump car, the combination of a plurality of doors, individual raising mechanisms therefor adapted to push upward on the under side of the doors, a yoke connecting such raising mechanisms, and an operating mechanism adapted to move said yoke.

7. In a dump car, the combination of dumping doors, of two raising mechanisms adapted to push upward on the undersides of the said doors, a yoke connecting near its ends with said raising mechanisms, and winding mechanism connected with substantially the middle point of the yoke.

8. In a dump car, the combination of dumping doors and raising mechanisms extending longitudinally of the car, said raising mechanisms adapted to push upward on the under side of the said doors and adapted to operate such doors conjointly if all move, or independently if any stops short of its closed position.

9. In a dump car, the combination of a plurality of doors, individual raising mechanisms therefor extending longitudinally of the car, said mechanisms adapted to push upward on the under side of the said doors, a yoke connecting such raising mechanisms, and an operating mechanism adapted to move said yoke.

10. In a dump car, the combination of

dumping doors, raising mechanism adapted
to push upward on the under sides of said
doors to raise the doors concurrently, and
compensating mechanism adapted to allow
5 the raising of the rest of the doors inde-
pendently if some of the doors stop short of
their final position.

In testimony whereof, I hereunto affix my
signature in the presence of two witnesses.

VINTON E. SISSON.

Witnesses:

J. THELMA KNUDSON,
MARY D. WHITCOMB.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."
