No. 881,884. PATENTED MAR. 10, 1908.

E. I. DODDS.

RAILWAY DUMPING CAR.

APPLICATION FILED DEC. 5, 1906.

2 SHEETS—SHEET 1.

Fig. 1.

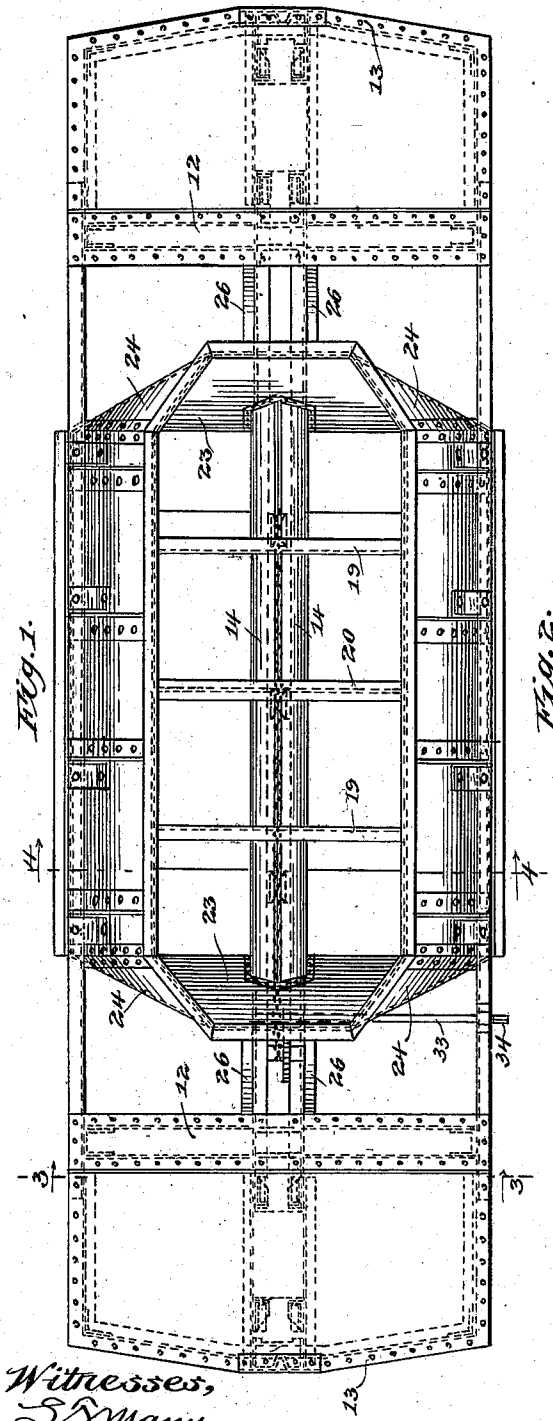
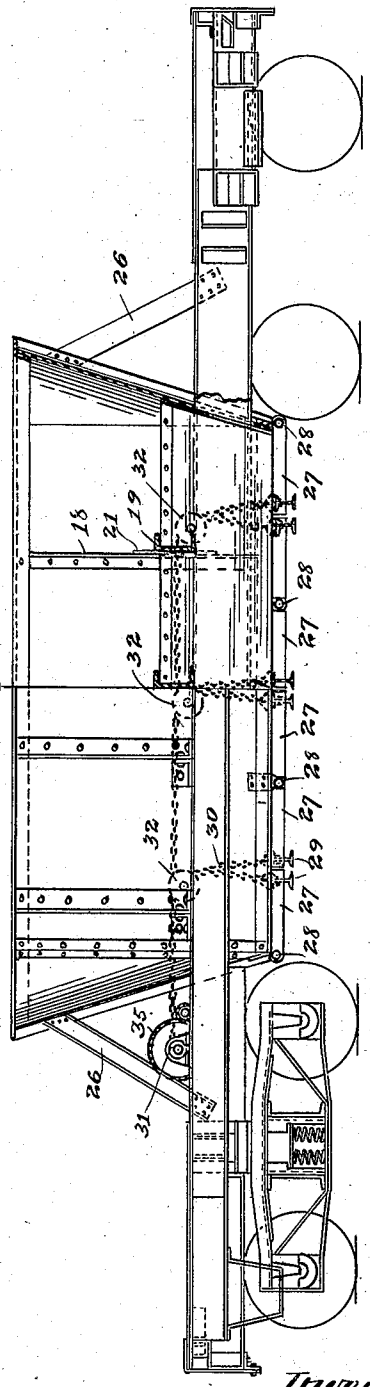


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3.

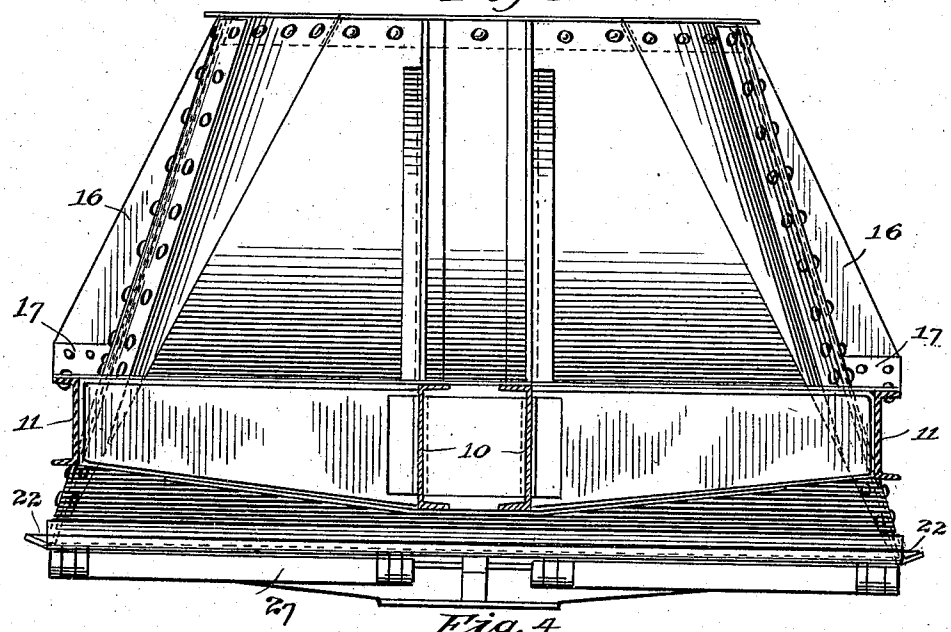
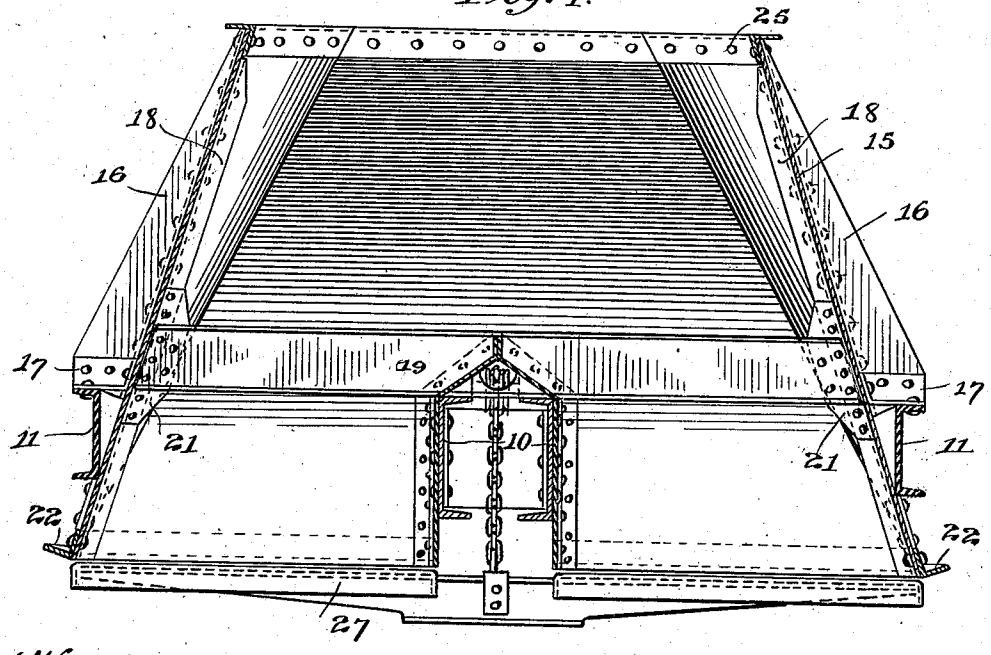


Fig. 4.



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ETHAN I. DODDS, OF PULLMAN, ILLINOIS, ASSIGNOR TO THE PULLMAN COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

RAILWAY DUMPING-CAR.

No. 881,884. Specification of Letters Patent. Patented March 10, 1908.

Original application filed July 6, 1904, Serial No. 215,492. Divided and this application filed December 5, 1906. Serial No. 346,437.

To all whom it may concern:

Be it known that I, ETHAN I. DODDS, a citizen of the United States, residing at Pullman, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Railway Dumping-Cars, of which the following is a specification.

My invention concerns railway dumping cars, and its object and purpose is the production of such a car whose body shall be so shaped that it will dump a moist or other adhesive lading having a tendency to cling to the walls without leaving any appreciable amount adhering to the inner faces of the walls. The end plates or walls of the car-body are so disposed that a maximum load with an underframe of given dimensions can be transported and readily discharged. In my preferred embodiment of the invention, the car-body side walls are straight, rectangular, and diverge downwardly, while the end walls diverge upwardly, their converging side edges being joined to the end edges of the side walls by inwardly and upwardly inclined triangular corner plates.

In the accompanying drawings, which form a part of this specification, I have illustrated a desirable embodiment of my invention.

Figure 1 is a plan view of a preferred form of dumping car; Fig. 2 is a partial side elevation and partial central longitudinal section of the car shown in Fig. 1, Fig. 3 is a cross section on line 3—3 of Fig. 1, and Fig. 4 is a vertical cross section on line 4—4 of Fig. 1.

The car underframe includes the usual channel center sills 10—10, channel side sills 11—11 placed with their flanges projecting outwardly, body bolsters 12—12 and end sills 13—13. These center sills extend through the car-body, which is only partially as long as the underframe, and are provided along their tops and sides with the usual form of hood 14, which deflects the lading to either side of the sills, as will be readily understood.

Instead of having the side walls of the car-body vertical, as is customary, I incline the walls 15 any desirable amount so that they diverge downwardly, as is clearly indicated in Fig. 4. In order to support these sides on the side sills, I mount on the outer surfaces of the side walls, angle side stakes or supports 16, the outwardly projecting flanges of which taper upwardly. At their lower ends, these stakes and the sides of the car are secured to the top flanges of the channel side sills 11 by means of brackets 17, which are riveted to the side stakes, to the side walls and to the side sills, as is clearly illustrated in Fig. 4. On the inner faces of these side walls 15 are a number of angle bars 18, which in effect constitute side stakes. I have shown these bars 18 as extending the full depth of the walls, but it is obvious that the length of the bars may be varied within considerable limits, or the bars may be wholly omitted, if desired. However, they form convenient means to which to attach the ends of channel cross beams 19 and the centrally-disposed transverse I-beam 20. These channel beams may be secured to the angle bars 18 in any convenient manner, but I prefer to use gusset plates 21 in this connection. The cross beams mentioned rest upon the center sills and are disposed above the side sills. To strengthen the lower edges of these side walls 15, there are riveted along their lower margins angle bars 22, one flange of each of which projects outwardly and acts to stiffen the plate constituting the side walls.

The end walls 23 converge downwardly and their side edges taper upwardly, as will be apparent from an inspection of Figs. 1 and 3. Their lower edges extend across the full width of the widest part of the car-body, while their top edges are only equal to approximately one-third the width of the car. To join the tapering edges of these end walls 23 with the adjacent edges of the downwardly-diverging rectangular side-walls, I employ triangular corner or gusset plates 24, suitable butt straps or angle bars being used at the points of junction of the corner plates with the side and end walls. As will be observed, these corner plates or walls incline inwardly toward the top of the car, or, in other words, they flare outwardly downwardly, similarly to the side walls. Around the top edge of the car-body, a coping angle-iron 25 of the usual construction is used, and in order to brace the body lengthwise, its upper portion is braced against the center sills 10 by means of a pair of channel bars

or braces 26 at each end, which are riveted at their lower ends to the outer surfaces of the channel center sill webs.

The opening and closing of the bottom of the car-body is controlled by a number of transverse doors 27 hinged at the points 28. At its free edge, each door has an I-beam 29 connected by a chain or cable 30 to a drum 31, passing over one or more intermediate sheaves or pulleys 32. A shaft 33, whose outer end is squared or angular at 34 for the application of a wrench or handle, controls the turning of drum 31 through suitable gearing 35, so that the operator, through the handle applied to the shaft 33, has complete control of the doors. When this drum 31 is allowed to pay out its chains or cables, the load within the car-body causes the doors to descend, whereupon the lading is dumped, as is obvious, and in order to close the doors it is merely necessary to revolve shaft 33 to turn the drum 31 and wind the chains or cables thereupon. I have shown these doors 27 as extending from the side of the car to the adjacent edge of hood 14, but it will be apparent to those skilled in the art that the doors, if desired, may extend across the whole width of the body.

This car has been described as having both center sills and side sills, but it may be noted that either may be omitted provided the side walls are made strong enough to constitute plate girders.

When the bottom doors of the car are dropped to permit discharge of the load, the downwardly convergent end walls direct the load between the car trucks, and under ordinary circumstances such inclined walls would tend to cause a choking at the bottom mouth of the car-body, but owing to the fact that the side walls are made downwardly flaring, this tendency for choking is neutralized or overcome. Since the load by its own weight can readily drop away from these inclined walls, substantially all of the load is discharged, leaving practically none adhering to the inner faces of the car-body.

Minor mechanical changes may be made in the structure shown and described without departing from the substance of my invention, and consequently my invention is not limited to the exact details of structure illustrated, but includes all such changes as are apparent to those skilled in this art.

This application is a division of my former application Serial No. 215,492, for steel car construction, filed July 6, 1904.

I claim:

1. A railway car-body having side and end walls, the latter being upwardly divergent, and corner walls connecting said side and end walls, substantially as described.

2. A railway car-body having side and end walls, the latter being upwardly divergent, and inclined corner walls connecting said side and end walls, substantially as described.

3. A railway car-body having rectangular side walls and end walls, the latter being upwardly divergent and having their side edges upwardly convergent, and triangular corner walls or plates connecting the adjacent edges of said side and end walls, substantially as described.

4. A railway car-body having downwardly divergent side walls, upwardly divergent end walls, and corner walls connecting said side and end walls, substantially as described.

5. A railway car-body having downwardly divergent side walls, upwardly divergent end walls, and inclined corner walls connecting said side and end walls, substantially as described.

6. A railway car-body having rectangular downwardly divergent side walls, end walls upwardly divergent with side edges upwardly convergent, and triangular corner plates connecting adjacent edges of said side and end walls, substantially as described.

7. A railway car-body having rectangular downwardly divergent side walls, end walls upwardly divergent with side edges upwardly convergent, and upwardly and inwardly inclined triangular corner plates connecting adjacent edges of said side and end walls, substantially as described.

8. In a railway car, the combination of a car under frame having channel side sills, a car-body having downwardly divergent side walls disposed inside of said side sills, and side stakes fastened to the outer faces of said side walls and to the top flanges of said channel side sills, substantially as described.

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