

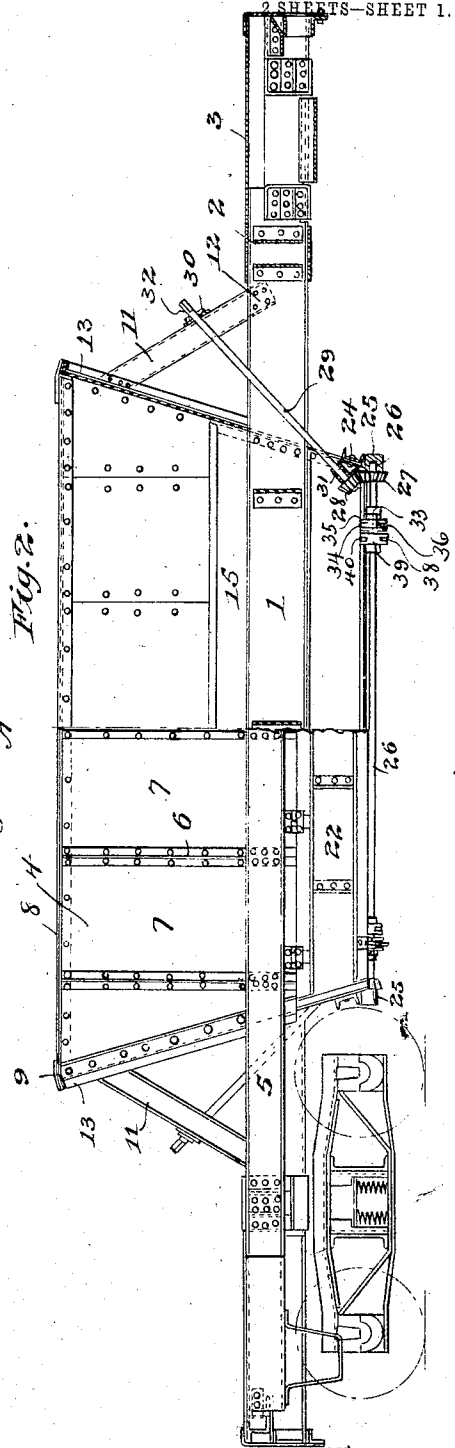
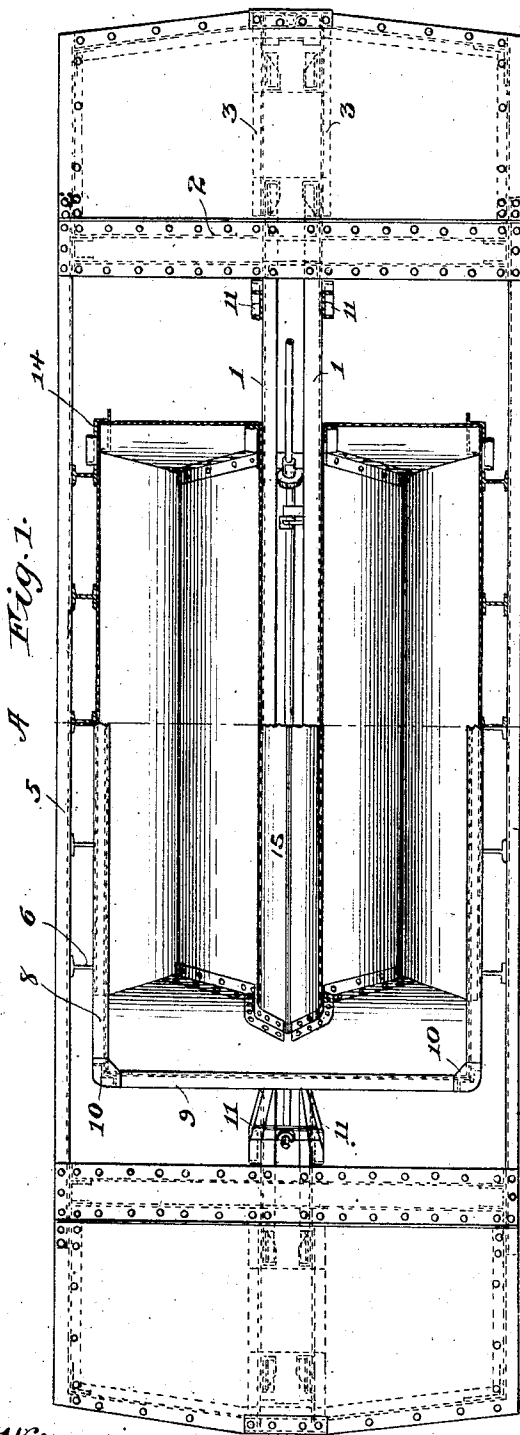
No. 874,577.

PATENTED DEC. 24, 1907.

E. I. DODDS.
METALLIC ORE CAR.

APPLICATION FILED JULY 24, 1905.

2 SHEETS—SHEET 1.



Witnesses,
J. J. Mann
Walter M. Fuller

Inventor,
Ethan I. Dodds.
By Alfield, Towle & Lenthicum
Attys.

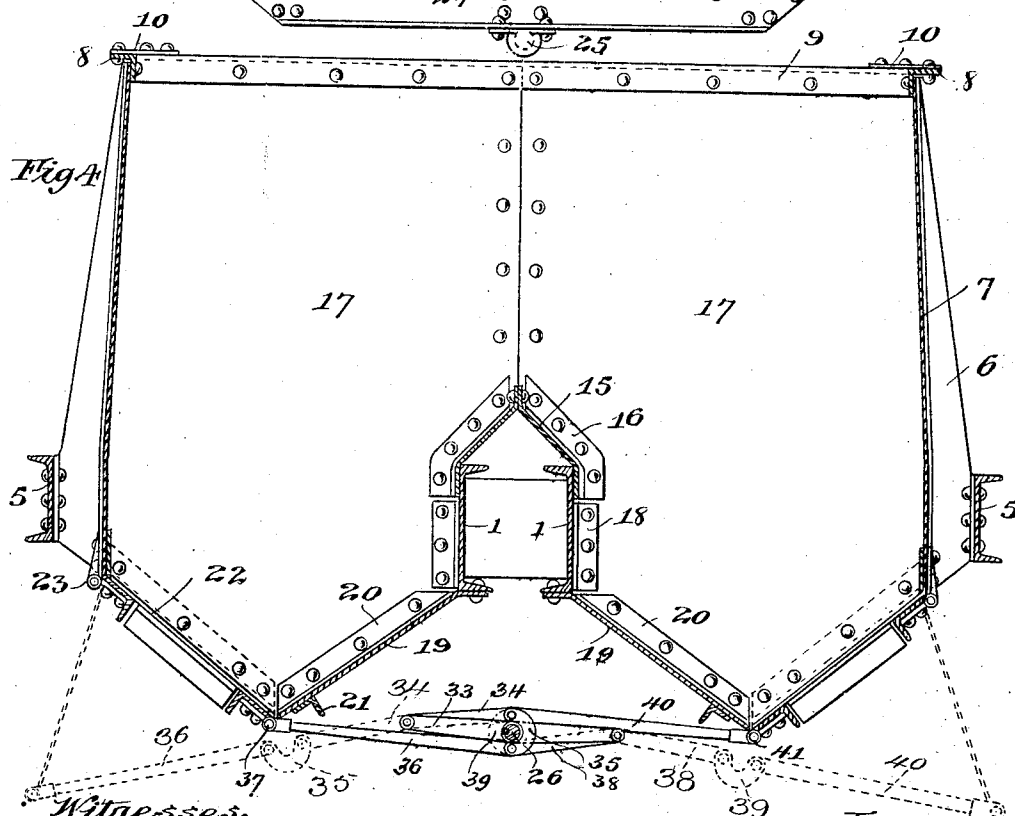
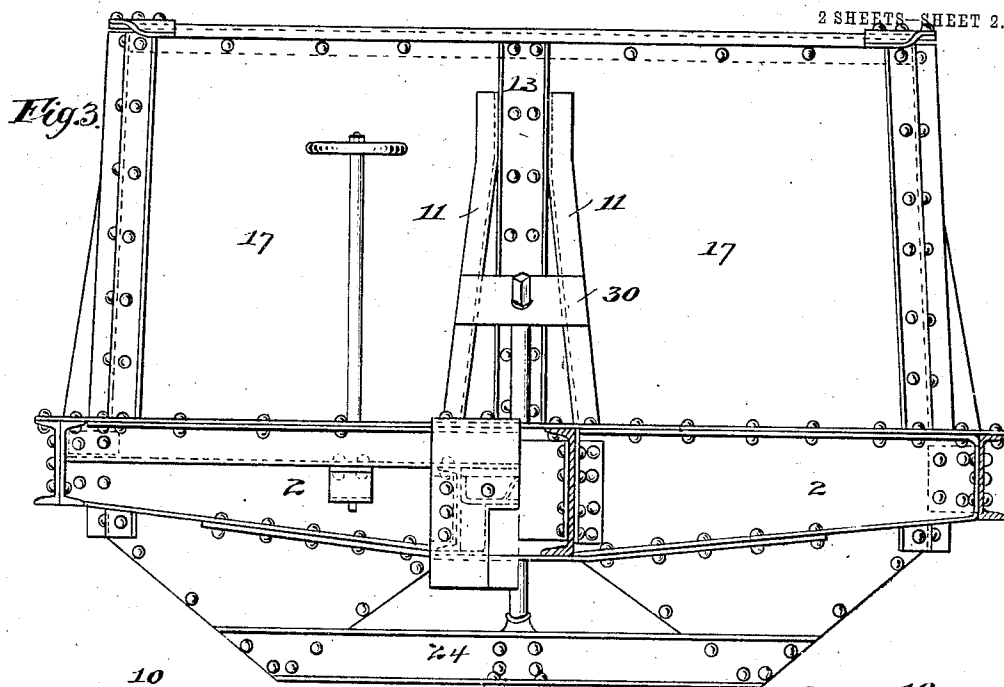
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UNITED STATES PATENT OFFICE.

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

METALLIC ORE-CAR.

No. 874,577.

Specification of Letters Patent.

Patented Dec. 24, 1907.

Application filed July 24, 1905. Serial No. 270,993.

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 Metallic Ore-Cars, of which the following is a specification.

This invention relates to metal cars such as are employed in transporting ore, coke, and other more or less sticky and adhesive classes of lading, and the general object of the invention is to provide a car of such a form and construction as will readily effect the full and complete discharge of the load by gravity, without allowing portions of its load to adhere to its walls, necessitating the manual discharge of such residue.

Another object of my invention is to provide a car combining the maximum of strength, rigidity and durability with light weight and facilities for easy repairing.

Further objects of my invention are the employment of improved means for actuating and locking the load discharging doors, together with supporting and strengthening means for the ends of the body of the car.

To these ends my invention consists in a metal car having peculiarities of form and construction substantially as hereinafter described and more particularly pointed out in the claims.

A car constructed in accordance with my invention is illustrated in the accompanying drawings; wherein,—

Figure 1 illustrates a plan of the car partly in horizontal section; Fig. 2 shows a partial side elevation and partial vertical central longitudinal section; Fig. 3 illustrates an end elevation of the car; and Fig. 4 shows a transverse central section on the line A—A of Fig. 1.

The under frame of the car includes two channel center sills 1, 1, which are attached to and extend through the body bolsters 2; and to the outer ends of the center sills are attached the draft sills 3, 3. The body of the car 4 occupies the central portion of the frame between the trucks and is supported by the center sills and by the side sills 5, 5, to the latter of which it is attached by means of side stakes 6, formed of I-beams cut on the bias, the shorter outer flanges of which are attached to the side sills 5, while the longer inner flanges are secured to the sides of the car 7, which latter are preferably

downwardly divergent, as shown. The sides 7 and ends 17 of the car are provided with coping angle irons 8 and 9 and strengthening gusset plates 10, at the corners. The ends of the body are inclined and are supported by means of channel struts 11, 11 which are riveted at their lower ends 12 to the webs of the center sills and secured at their upper ends to the flanges of upright strengthening channels 13, riveted to the end walls of the car. The corner posts of the car comprise the channel beams 14, the webs of which have been bent longitudinally to form an angle of 90 degrees, the construction being clearly shown in Fig. 1.

Secured to the outer side of the webs of the center sills 1 are upwardly converging plates 15 riveted together at their upper margins and secured to the ends of the car by the angle plates 16. These plates 15 act as load deflectors and reinforcing means for the center sills. The center sills 1, 1, are also secured to the ends of the body 17 by means of the angle plates 18, as is illustrated in Fig. 4. To the lower flanges of the center sills are attached, by means of rivets, inclined downwardly divergent plates 19, which form a portion of the bottom of the body, said plates being secured to the end of the body by means of angle plates 20. Angle bars 21 are riveted to the lower side of the plates 20 for the purpose of stiffening them, and they may if desired, be attached to the end channel beams 24. Doors 22, pivoted to the sides of the car at 23, constitute the other inclined portions of the bottom of the body. Across each end of the body, and connecting the two lower portions thereof, are the channel beams 24, to the lower side of which is secured, by means of bearings 25, a shaft 26, having thereon a bevel gear 27, meshing with a similar gear 28 on a shaft 29, rotatably supported in a bearing 31 and in a cross piece 30 attached to the two upright channel members 11. The upper portion of the shaft 29 is provided with a squared end 32, to which may be attached a wrench or any other form of turning means for operating the shaft and the gears.

Keyed on shaft 26 is a lever 33, extending from the shaft in opposite directions. Pivoted to one end of this lever 33 is a link 34, the latter pivoted at its other end to a curved connection-piece 35, which in turn is pivoted at its other end to a link 36, the latter being

hinged at 37 to the door. The other door 22 is similarly connected to lever 33 by corresponding parts 38, 39, 40 and 41. This connection of links and levers not only operates as actuating means for the doors, but also constitutes locking means to keep the doors closed. Owing to the peculiar arrangement of these parts as shown in full lines in Fig. 4, the pull on the lever 33 due to the weight of the doors and load resting thereon is on a line which passes through the shaft thus giving to the lever and shaft a very small turning moment, the construction acting substantially as a locking means.

By turning the shaft 29, the shaft 26 is operated by means of the gears to turn the lever 33 and the attached parts to open and close the doors 22.

In closing the doors the system of connection links is wrapped around the shaft 26 so as to operate as an efficient locking means. To open the doors the shaft 26 is turned so as to unwrap the links from around the shaft and to straighten them out as is shown in dotted lines in Fig. 4. By this construction I do away with the use of chains which, because of their liability to become tangled or kinked, frequently break, dumping the load upon the road and seriously damaging the brake beams. I also secure the advantage over chains of having a positive opening movement.

By my invention I secure a car whose load is easily and rapidly discharged, and owing to its peculiar design, means are provided to prevent, as far as possible, the adhesion to the sides, and, consequently, only partial discharge of the contents of the car. By the end supports for the body of the car, I secure an unusually strong structure, combined with simplicity and ease of manufacture and repair.

Various changes may be made in the construction of such a car without departing from the substance of the invention as defined by the appended claims.

This patent is intended to embrace only so much of the disclosure made herein as is covered by the claims.

I claim:

1. In a car of the class described, the combination of center sills having flanges along their lower edges, a car body extending below said sills on each side thereof, said lower portions each having downwardly converging bottom walls secured to a flange of said center sills and to a side wall of said car body, substantially as described.

2. In a car of the class described, the combination of flanged center sills, and a car body extending below said center sills on each side thereof, said lower portions each having downwardly convergent bottom walls secured to a flange of said center sills and to a side wall of the car body, one of the bottom walls of each of said lower portions constituting a load discharging door, substantially as described.

3. In a car of the class described, the combination of flanged center sills, a car body extending below said sills on each side thereof, said lower portions each having downwardly converging bottom walls secured to a flange of said center sills and to a side wall of said car body, the outer bottom walls of said lower portions being hinged to form load discharging doors, substantially as described.

4. The combination in a car having a longitudinal sill and a car body, of a bar secured to the end of the car body, and a strut riveted to the bar and sill, substantially as described.

5. The combination in a car having a longitudinal sill and a car body, of a flanged bar secured to the end of the car body, and a strut riveted to the flange of the bar and to the sill, substantially as described.

6. The combination in a car having a longitudinal sill, and a car body, of a flanged bar secured to the end of the car body, and struts riveted to the flanges of the bar and to the sill, substantially as described.

7. The combination in a car having a center sill composed of two spaced channel beams, of a car body, a bar secured to the end of the car body, and struts connecting the bar and channel beams, substantially as described.

8. The combination in a car, having a center sill composed of two spaced channel beams, of a car body, a channel bar secured to the end of the car body, and struts fastened to the flanges of said bar and to the webs of the channel beams, substantially as described.

9. The combination in a car, having a center sill composed of two spaced channel beams, of a car body, a channel bar secured to the end of the car body and channel struts connecting the flanges of said bar and the webs of said channel beams, substantially as described.

ETHAN I. DODDS.

Witnesses:

WALTER M. FULLER,
FREDERICK C. GOODWIN.