A. D. TAIT.

DUMP CAR.

APPLICATION FILED JUNE 27, 1918.

1,311,140.

Patented July 22, 1919.

2 SHEETS—SHEET 1.

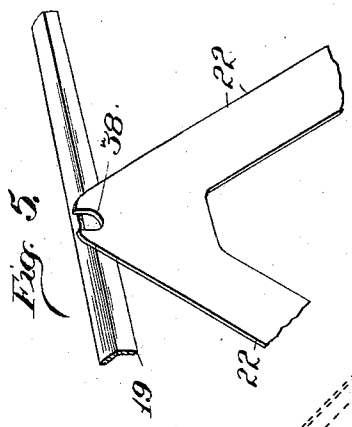


Fig. 2.

Fig. 1.

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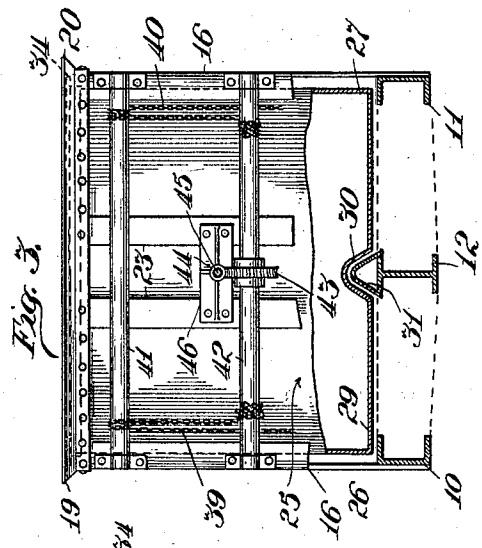


Fig. 3.

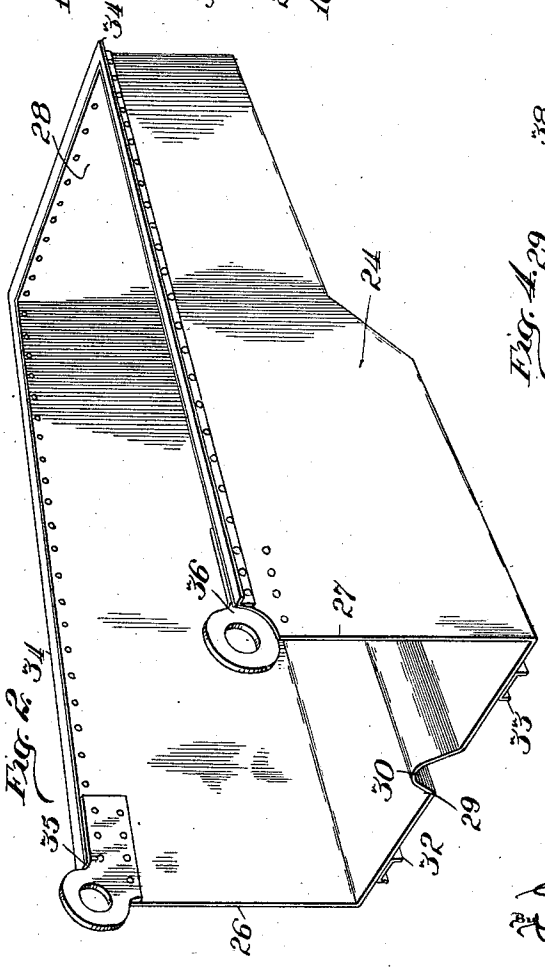


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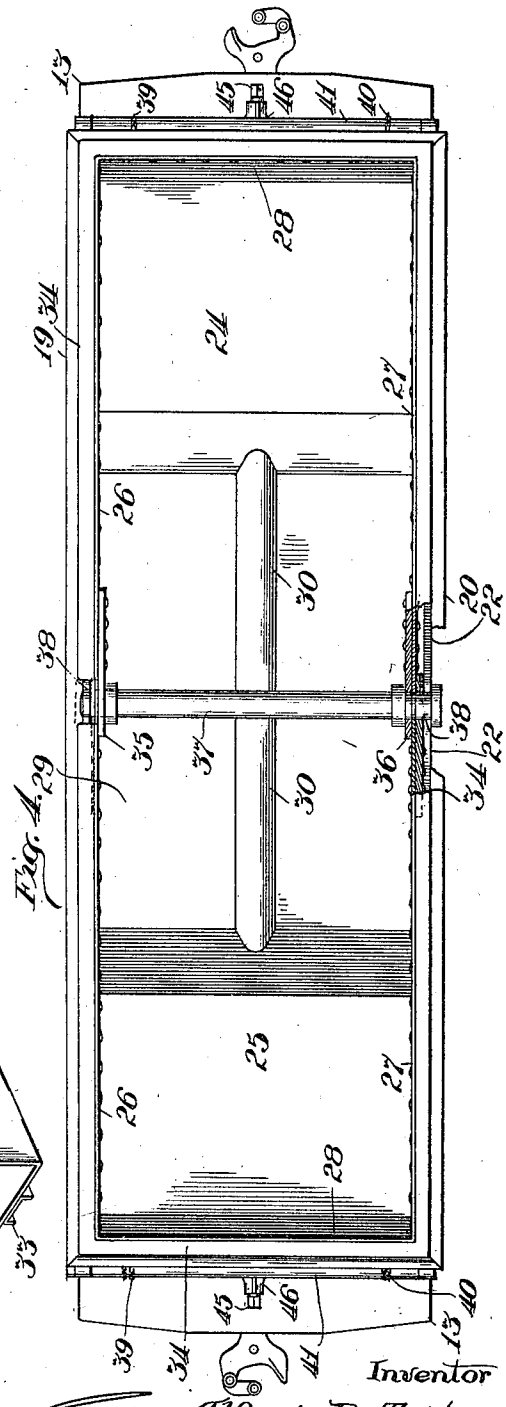


Fig. 4.

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DUMP-CAR.

1,311,140. Specification of Letters Patent. Patented July 22, 1919.

Application filed June 27, 1918. Serial No. 242,147.

To all whom it may concern:

Be it known that I, ALFRED D. TAIT, a citizen of the United States, and resident of Evanston, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Dump-Cars, of which the following is a specification, and which are illustrated in the accompanying drawings, forming a part thereof.

The invention relates to dump cars adapted for the transportation of such lading as ores, coal, gravel, etc.; and its object is to provide a car for this service which, while having great capacity, may be quickly and readily dumped; will be free from the objectionable trap or dumping doors now in common use; a further advantage being that the body may be readily removed from the framework of the car for repairs or substitution.

In its broader aspects the invention consists of a car having a body composed of two sections, the division being on the transverse median line, each section being pivoted at its inner end upon a rod or shaft mounted upon the upper portion of the framing, permitting its outer end to be raised for the purpose of discharging the lading. It consists further in various details of construction as hereinafter set forth, including means for tilting the body sections, for locking them in service position and in raised position.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a side view of the car, partly in elevation, partly in section, some portions being broken away, differently raised positions of the body sections being indicated in dotted line;

Fig. 2 is a view in perspective of one of the body sections detached;

Fig. 3 is an end view of the car, portions being broken away and some parts being shown in transverse vertical section;

Fig. 4 is a plan view with parts broken away; and

Fig. 5 is a detail of the framing of the car showing the bearing from one end of the pivoted shaft.

The underframing of the car comprises a pair of side sills 10, 11, shown as of channel section, and a center sill 12, shown as an I-beam. These sills are preferably offset downwardly between the trucks, as shown in Fig. 1. Suitable end and cross sills, as 13, 14, 15, are provided as may be essential to strength and rigidity. The center sill, while shown as a single I-beam, may take any preferred form, it being deemed preferable, however, to give it the least practicable width in order to provide ample clearance for dumping. Furthermore, the end portions of the center sill will be suitably configured to accommodate the draft gear. This detail having no relation to the essential features of the invention, may be worked out by the builder according to his own judgment and is not illustrated.

The upper framing of the car comprises a plurality of standards, as 16, 17 and 18, rising from the sills, and side and end stringers 19, 20, secured to the upper ends thereof, this framing being braced by diagonals, as 21, 22. The diagonals 22 are shown as united at their upper ends to form an arch which springs from the downwardly inclined portions of the offset of the side sills, heretofore referred to. The upper framework may be further stiffened by means of uprights 23.

The body of the car comprises a pair of buckets 24, 25, which are oblong rectangular in horizontal section and meet at the transverse median line of the car, their adjacent ends being open. Each bucket comprises side walls 26, 27, and end wall 28, and a bottom 29. The outer end of the bucket is of less depth than the inner end, the latter portion fitting within the downwardly offset portion of the sills. The inner portion of the bottom of the bucket is channeled, as shown at 30, to accommodate an A-shaped deflecting plate 31 covering the center sill 12. A pair of channel bars 32, 33, are secured to the under face of the bottom 29, and may be continued upwardly along the outer face of the end 28. These bars not only stiffen the bucket but serve as retainers for the hoisting chains or cables hereinafter described. The bucket is further reinforced by a rail in the form of an angle bar 34, secured to its upper margin.

To each of the upper inner corners of each bucket there is secured an eye plate 35, 36, adapted to receive a shaft 37, the ends of which rest loosely within suitable pockets 38 at the top of the arch formed by the diagonal braces 22, 22, this recess also entering the stringers 19. The eye plates 35, 36, on the two buckets are so attached that they overlap. Hoisting cables 39, 40, here shown

in the form of chains, are attached to the inner ends of the bottoms of the buckets,—as shown the attachment being to the channel bars 32, 33. These cables extend toward the end of the car, below the bucket and upwardly over a shaft or roller 41, journaled in the corner uprights of the car frame, and thence downwardly to a winding shaft 42, similarly journaled, to which shaft they are firmly secured.

The shaft 42 carries a worm gear 43, meshing with a worm 44 formed on a short shaft 45, journaled in a bracket 46 secured to the end frame of the car, such attachment, in the construction as illustrated, being to the uprights 23, 23. The projecting end of the shaft 45 is squared for the engagement of a wrench or suitable crank by means of which it may be turned.

When the buckets 24, 25, are in service position the margins of their inner ends abut, thereby forming a single commodious receptacle for the lading, the weight of which urges the two buckets together and prevents leakage. The outstanding leaf of the angle bar 34 rests upon the side and end stringers 19, 20, and the bottom of the bucket rests upon a cross beam of the sub-frame, which may be the body bolster of the car. When it is desired to dump the load the buckets are tilted upwardly, as indicated by dotted lines in Fig. 1, by turning the shaft 45 or by the application of lifting power in any other way. While hoisting mechanism incorporated into the car is shown, it will, of course, be entirely feasible to tilt the buckets by means of a crane placed at the side of the track.

Should it be desired to remove the body of the car from the framing, either while full or empty, it may be accomplished by connecting suitable hoisting mechanism to the shaft 37. Inasmuch as the cars used upon any road will ordinarily be of uniform construction, a defective body may be replaced by another in order that the car may not go out of service while repairs are being made.

If deemed advisable a lock may be provided for holding the buckets in service position to prevent them from being jarred apart in transit. Such a locking device is shown as comprising a hook 47, pivotally attached to the end of the car frame and adapted to turn over the end of the bucket.

Means may also be provided for holding the buckets in elevated position. For that purpose there is shown a segmental ratchet bar 48, attached to the side frames of the car, and a weighted pawl 49 attached to the outer face of the side wall of the bucket for engaging the teeth of the ratchet when the bucket is tilted.

A practical embodiment of the invention is shown and described, but various changes in detail may be made without departing from its scope.

I claim as my invention—

1. In a dump car, in combination, a suitable frame, a body loosely supported in the frame and divided on a vertical plane into two sections, the two sections being pivoted to the frame on a common center adjacent the upper portion of their meeting edges.

2. In a dump car, in combination, a suitable frame, a shaft carried by the frame and transverse thereto, a pair of oblong buckets each pivotally attached at one end to the shaft, adjacent ends of the buckets being open.

3. A dump car comprising a body divided on a vertical plane, the two sections of the body being tiltable about a common center.

4. In a dump car, a body frame, a transverse shaft carried by the frame at the upper end of the median plane thereof, and a pair of buckets pivotally supported on the shaft and normally resting in the frame, adjacent ends of the buckets meeting and being open.

5. In a dump car, a body frame, a transverse shaft carried by the frame at the upper end of the median plane thereof, a pair of buckets pivotally supported on the shaft and normally resting in the frame, adjacent ends of the buckets meeting and being open, and means for raising the remoter ends of the buckets.

6. In a dump car, a body frame, a transverse shaft carried by the frame at the upper end of the median plane thereof, a pair of buckets pivotally supported on the shaft and normally resting in the frame, adjacent ends of the buckets meeting and being open, a power shaft, a winding shaft in geared relation to the power shaft, and a cable connecting one of the buckets with the winding shaft.

7. In a dump car, a body frame, a transverse shaft carried by the frame at the upper end of the median plane thereof, a pair of buckets pivotally supported on the shaft and normally resting in the frame, adjacent ends of the buckets meeting and being open, means for raising the remoter ends of the buckets, and means for locking the buckets in raised position.

8. In a dump car, a body frame, a transverse shaft removably carried by the frame at the upper end of the median plane thereof, and a pair of buckets pivotally supported on the shaft and normally resting in the frame, adjacent ends of the buckets meeting and being open.

9. In a dump car, in combination, a suitable underframe, uprights rising from such frame, end and side rails carried by the uprights, the side rails each having a socket at the median plane of the car, a shaft loosely fitting in such sockets and laterally removable therefrom, and a body compris-

ing a pair of buckets pivoted upon the shaft, the adjacent ends of the buckets meeting and being open.

10. In a dump car, in combination, a suitable underframe, uprights rising from the frame, a pair of diagonals at each side of and rising from the frame, the members of each pair forming an arch having its crown at the median plane of the car, side rails mounted on the uprights and diagonals, inwardly and upwardly opening recesses formed in the rails and arches at the median line of the car, a shaft carried in such recesses, and a pair of buckets pivotally supported on the shaft and normally resting in the frame, adjacent ends of the buckets meeting and being open.

ALFRED D. TAIT.

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