March 29, 1932. J. L. WOOD 1,851,690

DUMP CAR

Filed Jan. 10, 1931

Fig. 1.

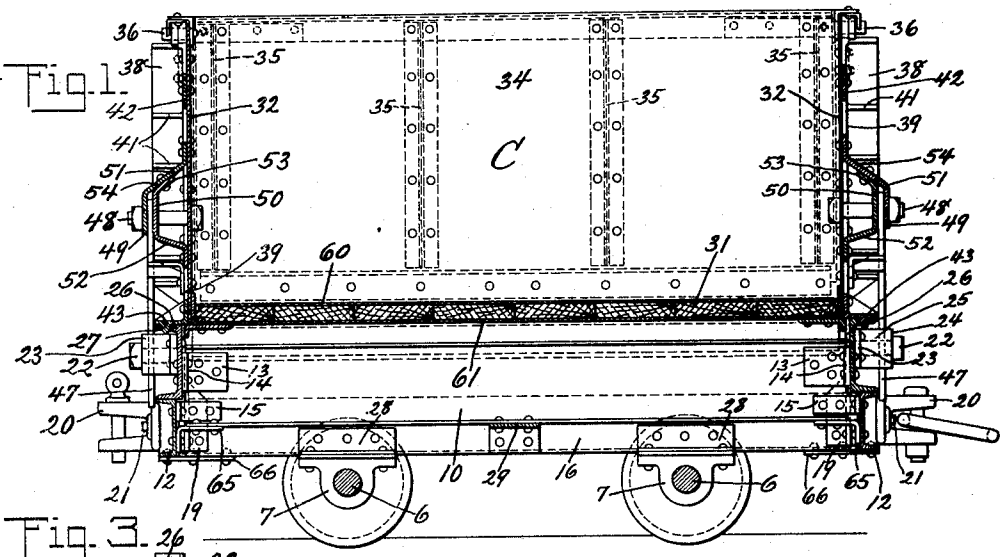


Fig. 3.

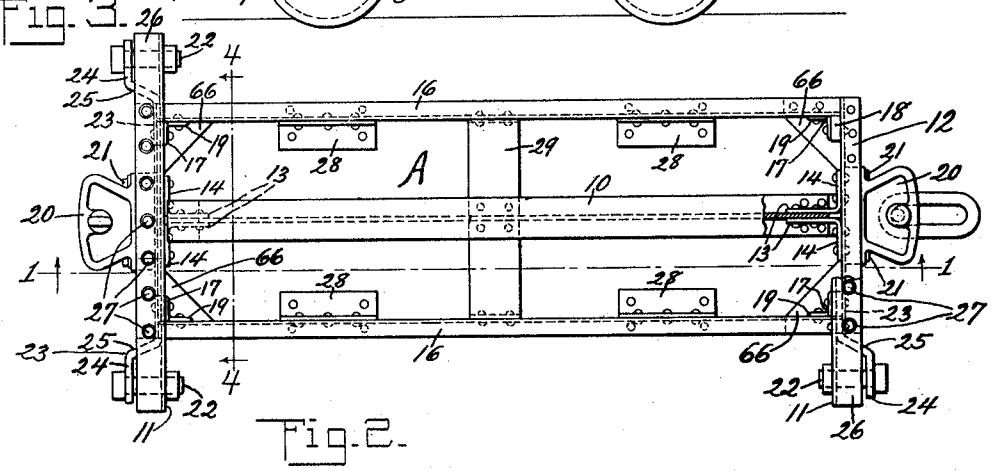


Fig. 2.

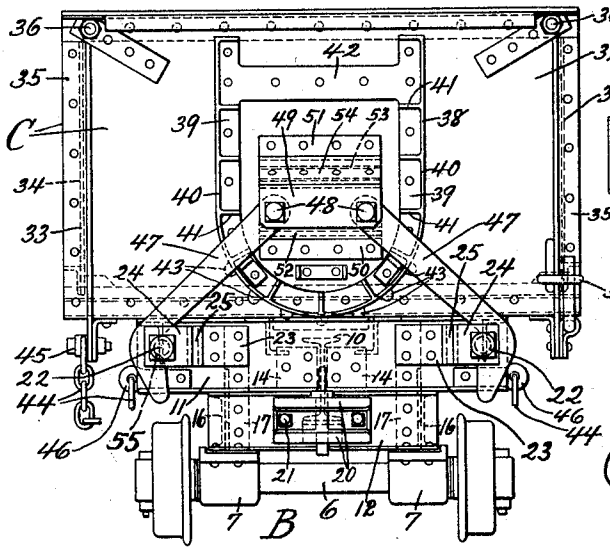
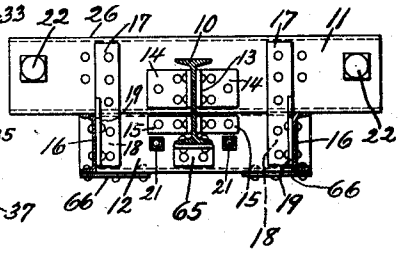


Fig. 4.



J. Leonard Wood INVENTOR

BY T. A. Gibbs

ATTORNEY

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UNITED STATES PATENT OFFICE

JOSEPH LEONARD WOOD, OF ATLANTIC HIGHLANDS, NEW JERSEY, ASSIGNOR TO AMERICAN CAR AND FOUNDRY COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY

DUMP CAR

Application filed January 10, 1931. Serial No. 507,813.

This invention relates to the art of dump cars and is more particularly concerned with a novel construction of a car designed for dumping movement in two directions.

A dump car made in accordance with this invention comprises generally a car frame which is mounted on the wheel trucks and which operatively supports the dumping body. An important object in view is the provision of a car frame which is characterized by the inclusion of a rigid center sill which constitutes the so called "backbone" of the frame. Inasmuch as the frame necessarily accommodates dumping action on the part of the dumping body it is important to locate a structure affording the main rigid effects centrally and longitudinally of the car where it does not interfere with the dumping movement.

More in detail, this invention contemplates a car frame construction having upper and lower end sills at each end of the car with both the end sills at one end connected to both the end sills at the other end by the center sill. The upper end sills constitute a trackway on which the car body operates while dumping, while the lower end sills are connected by side sills which are disposed beneath the level of the center sill at which location they do not interfere with the tilting movement.

Another important feature of the present invention is associated with the mounting of latch means for maintaining the dumping body in normal position and which latch means is operable to permit of dumping movement. In accordance with this invention a pair of latch members are pivotally mounted at one end of a pair of interfitting plates that are carried in offset relation by the body end walls. The other extremities of the latch members are formed with hook means designed for engaging the pins carried by the upper end sills at the opposite ends thereof. Other more detailed objects and advantages such as are associated with the provision of a practical dump car of the type noted will in part become apparent and in part be hereinafter stated as the description of the invention proceeds.

For a full and more complete understanding of the invention reference may be had of the following description and accompanying drawings wherein similar reference characters designate corresponding parts and in which

Fig. 1 is a longitudinal vertical section taken on a line at one side of the center sill. This view is taken about on the plane represented by the line 1—1 of Fig. 3.

Fig. 2 is an end elevation.

Fig. 3 is a plan view of the car frame with dumping body omitted, parts broken away and shown in section.

Fig. 4 is a transverse vertical section through the car frame and is taken about on the plane represented by the line 4—4 in Fig. 3.

Referring now to the drawings, the dump car made in accordance with this invention is shown as comprising generally a car frame A mounted on trucks B comprising axles 6 and journal boxes 7 and operatively supporting a dumping body C. The latter is normally held in non-discharging position thereon by latch means to be hereinafter described in detail.

The car frame A includes plural end sill constructions at each end of the car which are substantially duplicates and which are connected by a center sill 10. The end sill structure at one end may be described as comprising an upper end sill and rocker support 11 and a lower end sill 12 which is shorter than the upper end sill and has its center line coincident with the upper end sill 11. The center sill 10 is of I beam formation and affixed to the ends thereof on each side of the web portion are a pair of angle brackets having legs 13 and 14 riveted respectively to the center sill and upper end sill 11, which latter is of channel formation.

Supplemental angle brackets 15 are similarly secured to the center sill 10 and lower sill 12, also of channel formation, and clips 65 connect the lower flange of the center sill 10 to the end sills 12, to rigidly connect the respective parts. The lower end sills 12 at each end of the car are connected at their extremities by rolled channel side sills 16. The connections of the side sills with the end sills

are identical and one may be described as including an angle bracket 17 which has one flange in engagement with the upper end sill 11 and a lower block or filler 18 carried by the lower end sill 12, as illustrated at Fig. 3. This portion of the angle bracket 17 is connected to the respective end sills in any preferred manner, as by riveting. The other leg of the bracket 17 which is designated 19 is connected with side sill 16 as by rivets and this leg 19 terminates a slight distance above the side sill 16 as shown in Fig. 4. Gussets 66 are also provided to reinforce the members 12 and 16 at the four corners of the underframe, as shown in Fig. 3.

The lower end sill 12 carries draft means for the car in the form of a coupling designated 20 which is anchored to the end sill 12 as shown at 21. The upper end sill 11 carries latch-engaging pins 22 which are braced by brackets 23 having offset portions 24 connected with the main body portion of the brackets by an inclined intermediate portion 25. Brackets 23 are anchored to the upper end sill 11 by riveting and the offsets 24 are apertured to receive the pins 22. As above noted the end sill 11 is of channel formation and the upper flange thereof designated 26 is provided with a series of equi-distantly spaced openings 27 for a purpose to be later specified.

Trucks B are connected to the frame A by the angle plates 28, the angular legs of which are affixed to the journal boxes of the trucks and the side sills 16 respectively. Bracing means at the middle of the car frame is provided in the form of a tie plate 29 which is attached to the side sills and center sill respectively by suitable rivet connection.

Dumping body C is of general box formation and comprises a floor 31 which may be of plank, end walls 32 and sides defined by swinging doors 33. The latter may include a sheet metal wall 34 that is braced against bending by stiffening means in the form of angle bars 35. The planking of the floor 31 may be faced with sheet metal plates 60 and 61 on the top and bottom faces. The doors 33 are pivotally mounted at the top of the end walls 32 as indicated at 36 and door lock mechanism for maintaining the doors in closed position and for permitting of their swinging is associated with the lower edge of the door and the side edge of the floor 31. This door lock mechanism is shown at 37 and may be of the conventional type.

The structure which rockably supports the body C on the frame A comprises rocker frames 38, one being attached to each of the end walls 32. One of the rocker frames consists of a U-shaped casting having a flange 39 parallel with and riveted to the end wall and a curved flange 40 at right angles thereto. This angular casting is reinforced by ribs 41 which are integral with the respective flanges. A cross piece 42 connects the legs of the U and this cross piece, together with the flange 39, is anchored to end wall 32 of the body C.

The flange 40 of the rocker frame 38 is provided at the bend of the U with teeth 43 that are complementary to the openings 27 in the end sill flange 26. Some of these teeth 43 are at all times received in the openings 27 and function to prevent lateral displacement of the body C with respect to the frame A.

To the end of limiting rocking movement of the body C chains 44 are provided at each side of the car and these chains 44 have their ends affixed to the body C and the frame A respectively as shown at 45 and 46.

Pivotal mountings for the latch members 47 are provided in the form of pins 48 which are carried by the end walls 32 and offsets 49 and 50 of interfitting brackets 51 and 52 which are suitably mounted on the end walls 32. The offset 50 has a flange 53 that is connected to the inclined portion 54 of the bracket 51 as by riveting to provide a rigid structure. The pins 48 extend through apertures in the latch members 47 while the other extremities of the latch members are recessed as shown at 55 to provide hooks for engagement with the pins 22.

In operation the teeth 43 are received in openings 27 when the car is in an upright or normal position in which dumping is prevented by the hooks 55 of the latch members 47 engaging the pins 22 to maintain this non-discharging position. When the car is to be dumped the door 33 is released by proper operation of the door lock 37 adjacent the side on which the contents are to be dumped, and the latch member 47 on the side opposite that on which the contents are to be dumped is swung free of the pins 22. Under these conditions gravity action will have to be supplemented only very slightly to cause the body C to tilt on the rocker frames. As the body rocks the door 37 swings open and the contents are discharged. It is notable that the chains 44 are effective to limit the extent of the tilting movement.

While a preferred specific embodiment is hereinbefore set forth it is understood that I am not to be limited to the exact construction illustrated and described because various modifications of these details may be provided in putting the invention into practice within the purview of the appended claims.

What is claimed is:

1. A dump car comprising trucks, a car frame carried by the trucks and a dump body operatively mounted on the frame, said frame consisting of an upper end sill and track and a lower end sill at each end thereof, the sill construction at one end being connected to the corresponding construction at the other end by a center sill that is connected to both the upper and lower sills.

2. A car frame for dump cars, comprising

a center sill, upper and lower end sills at each end of the car connected to the center sill, and side sills disposed below the level of the center sill and connected to the extremities of the lower end sills, said lower end sills being shorter than the upper end sills.

3. A car frame of the character described, comprising upper and lower sills at each end of the car, the lower sills being shorter than the upper sills and a relatively deep center sill connected directly to all of said end sills.

4. A car frame of the character described, comprising, upper and lower channel shaped sills at each end of the car, the lower sills being shorter than the upper sills, the upper end sills constituting means on which a dump body may rock, and means carried by a car body engaging the upper end sills for preventing lateral movement of said car body relative thereto.

5. A dump car comprising, a car frame having upper and lower end sills at each end thereof, the lower end sills being shorter than the upper end sills, side sills connecting the lower end sills, a center sill connected to all of the end sills, flanges on the upper end sills having openings therein, a dump body, rockers on the dump body, teeth on the rockers complemental to the said openings, and latch means for preventing rocking movement of the body on the frame.

6. A dump car comprising, a car frame having upper and lower end sills at each end thereof, the lower end sills being shorter than the upper end sills, side sills connecting the lower end sills, a center sill connected to all of the end sills, flanges on the upper end sills having openings therein, a dump body, rockers on the dump body, teeth on the rockers complemental to the said openings and latch members pivotally mounted on and in spaced relation to the ends of the body.

7. A dump car comprising pairs of long and short end sills, a dump body rockable on said long end sills as a track, and a center sill connected to all of the end sills and adapted to receive the draft stresses to which the car is subjected.

In witness whereof I have hereunto set my hand.

J. LEONARD WOOD.