

No. 657,618.

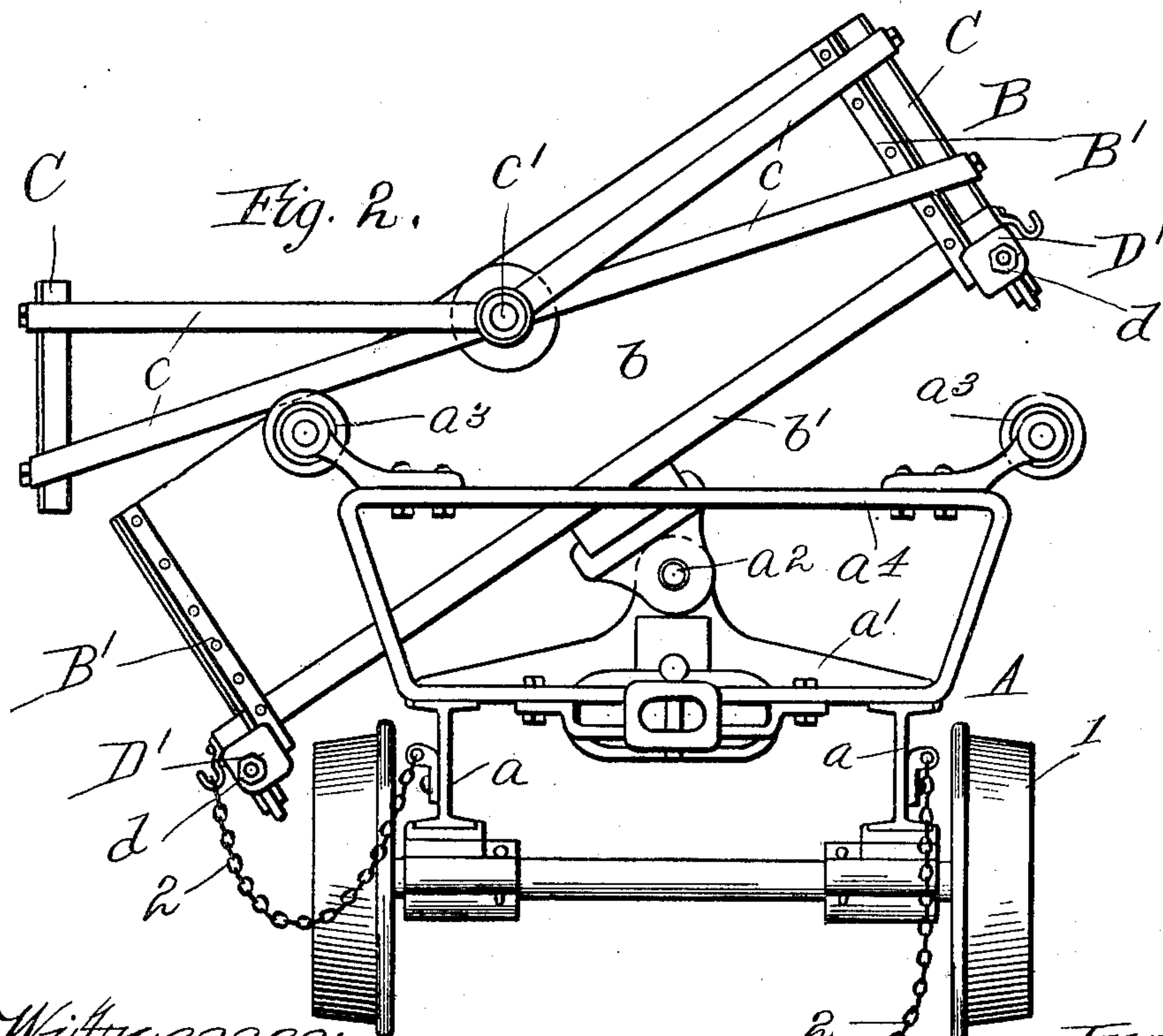
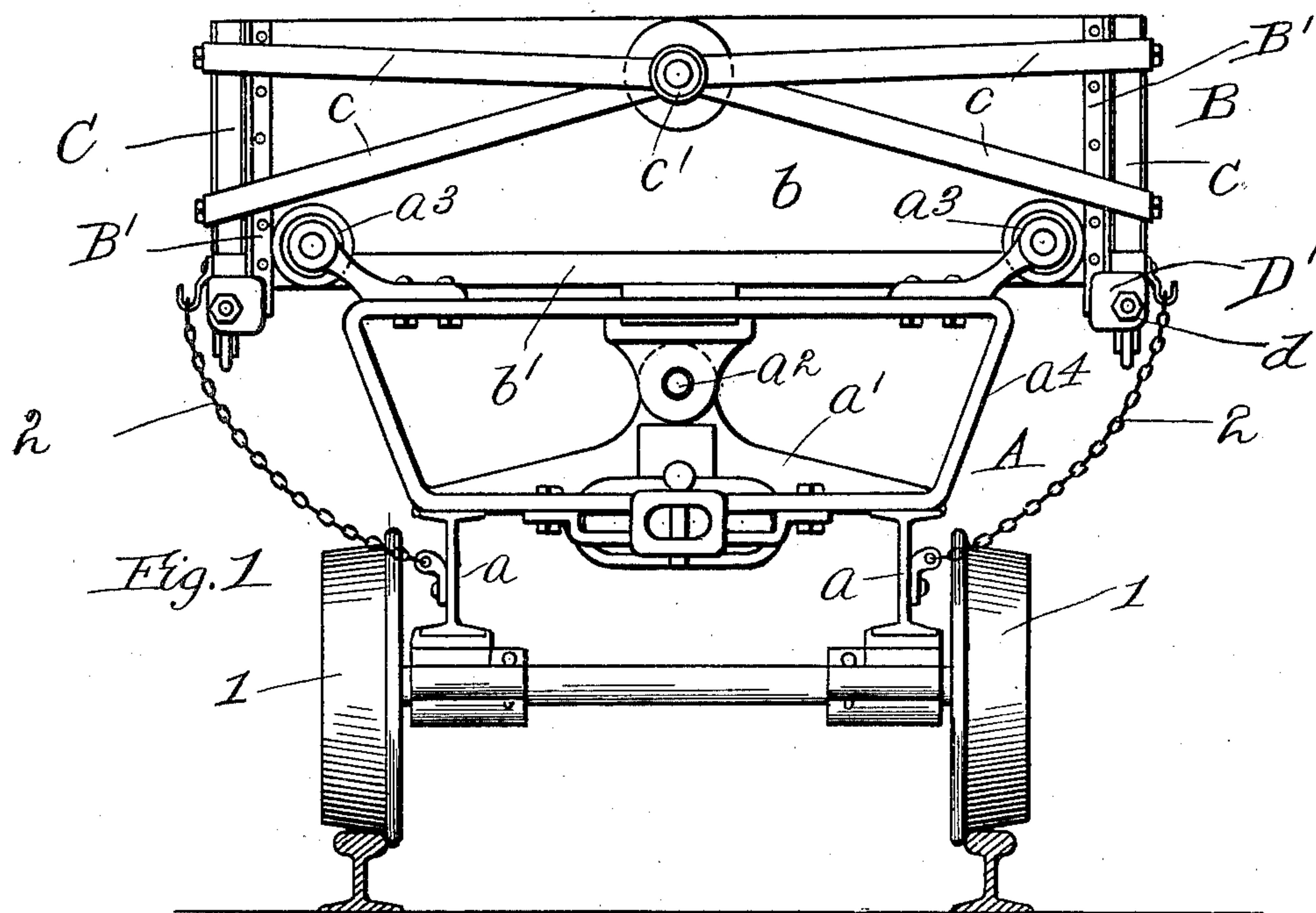
Patented Sept. 11, 1900.

J. B. RHODES.
DUMPING CAR.

(Application filed Apr. 13, 1899.)

(No Model.)

2 Sheets—Sheet 1.



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UNITED STATES PATENT OFFICE.

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DUMPING-CAR.

SPECIFICATION forming part of Letters Patent No. 657,618, dated September 11, 1900.

Application filed April 13, 1899. Serial No. 712,926. (No model.)

To all whom it may concern:

Be it known that I, JAY B. RHODES, a citizen of the United States, residing at Harvey, in the county of Cook, State of Illinois, have
5 invented a certain new and useful Improvement in Dumping-Cars, of which the following is a specification.

My invention relates more particularly to a construction of dumping-car in which the
10 receptacle is tilted sidewise for the purpose of dumping the load and in which such tilting of the receptacle serves to automatically operate or release the side board at which-
ever side of the car the load is to be dumped.

15 The objects of my invention are to provide a simple and efficient construction of dumping-car involving a well-balanced and easily-tilted receptacle and to so counterbalance the load and receptacle during the tilting of
20 the latter that the dumping angle will be reached without shock or jar and without danger of throwing the car off the track, to strengthen the side portions of the receptacle without materially increasing the weight of
25 the latter, and to provide certain novel details tending to increase the general efficiency and serviceability of cars of this class.

To the attainment of the foregoing and other useful ends my invention consists in
30 matters hereinafter set forth and claimed.

In the accompanying drawings, Figure 1 is an end elevation of a dumping-car embodying the different features of my invention. Fig. 2 is a similar view of the same, but showing the receptacle partially tilted to one side.
35 Fig. 3 is a side elevation of the car shown in Figs. 1 and 2. Figs. 4 and 5 are detail views of one of the truss-blocks.

A dumping-car constructed in accordance
40 with my invention comprises in general a truck or body frame A, supported upon car-wheels 1, a tilting receptacle B, mounted upon the said truck or body frame, and a couple of automatic side boards C, arranged to nor-
45 mally close the open sides of the tilting receptacle. The truck or body frame A is preferably composed of a couple of I-beams a , arranged to rest upon the journal-boxes, and a plurality of cross-beams a' , secured upon
50 the upper surfaces of the said I-beams. In

addition to the two side boards the tilting receptacle is preferably provided with end boards b , and its floor or bottom b' is adapted to receive and carry the load. The said receptacle is constructed to tilt about a longitudinal axis, so as to permit the load to be
55 dumped or discharged at either side of the track, and while various arrangements may be adopted to secure such tilting action on the part of the receptacle I prefer to connect
60 the latter with the truck-frame by means of suitable pivot-bearings a^2 . Thus pivotally mounted the receptacle may be readily tilted to either side for the purpose of discharging
65 its load, and as a simple and convenient arrangement for normally maintaining the receptacle in a horizontal position I connect the latter with the truck or body frame by
means of a number of stay-chains 2.

The automatic side boards, which serve to
70 close the open sides of the receptacle when the latter is in its normal or horizontal position, are provided with arms c , having their inner ends pivotally connected with the end
75 boards b , and it will be observed that the side boards by such provision are arranged to swing about an axis c' , which is directly above the axis afforded by the pivot-bearings a^2 . Ordinarily both side boards rest upon the
80 edge portions of the floor b' , as shown in Fig. 1; but to facilitate loading either side board may be swung over and allowed to temporarily rest upon the opposite side of the car, the said board being of course returned to its
85 normal position as soon as the receptacle has become filled and a closure of that side of the latter then becomes necessary to complete the loading. Preferably the tilting of the receptacle serves to automatically operate or
90 release the side board at whichever side of the car it is desired to dump, and to this end I provide the stops a^3 , which serve to prevent a downward movement of one side board when the receptacle is tilted, and as a mat-
95 ter of further improvement the said stops consist of rolls suitably mounted upon transversely-arranged frames a^4 , the latter being in turn supported by and suitably secured upon the end portions of the I-beams a . The
100 rolls a^3 are preferably grooved and adapted

to engage the lower edges of the arms c , it being observed that the latter are in this case each composed of a couple of flat bars secured to the end of a side board and converging inwardly to the common pivotal point or axis c' .

When it is desired to dump or discharge the load at one side of the car, the stay-chains at the opposite side of the latter are first released and the receptacle then tilted over sufficiently to permit the load to slide out, it being observed that during such operation the side board on the descending side of the receptacle is released therefrom and supported by the rolls a^3 , while the other side board is simply carried up and allowed to remain in place. As the axis about which the receptacle tilts is located somewhat below the latter, a slight push will therefore be sufficient to start the loaded receptacle over to one side, and while ordinarily in cars of this class the tilting movement of the receptacle has terminated suddenly and with an objectionable shock or jolt it will be seen that with my arrangement the weight of the load when tilted to one side is counterbalanced by the weight of the released side board and, moreover, that the leverage thus exerted by the latter increases as the receptacle tilts. In Fig. 2 the receptacle is shown as partially tilted to the left, the side board at the left being supported by the rolls or stops a^3 , and in such position it will be readily seen that each arm c of the side board when thus supported becomes a lever, with a stop or roll a^3 for a fulcrum. The farther the receptacle tilts the nearer the pivotal points of the arms are brought to the rolls a^3 , the leverage thereby increasing constantly and the receptacle in this way being permitted to tilt over and reach the dumping angle without shock or jar. It will be seen, therefore, that while I employ certain features of construction which permit the receptacle to be tilted with very little exertion I also provide means for retarding the movement sufficiently to prevent a violent bumping of the receptacle against the truck-frame.

While the center of the receptacle-floor is adequately supported by the pivot-bearings a^2 , the side portions of the said floor are preferably strengthened and rendered suitable for supporting heavy loads by means of a couple of longitudinally-extending trusses. The said trusses preferably consist of the angle-irons D , secured to the under side of the floor b' , the blocks D' , recessed to engage the end portions of the said angle-irons, and the truss-rods D^2 , having their end portions inserted through the blocks D' and provided with nuts d . The ends of the receptacle are strengthened by angle-irons B' , the lower ends of the latter being secured to the end portions of the angle-irons D , and as a matter of further improvement the recesses d' in the blocks D' are adapted to receive the flanges on the irons B' , in addition to engaging the

end portions of the irons D . (See Figs. 4 and 5.) By this arrangement the side portions of the floor are prevented from sagging under a heavy load and the receptacle rendered strong and rigid without a material increase in the weight thereof. Also the provision of the blocks D' permits me to dispense with bolts and rivets in the construction of the two trusses.

What I claim as my invention is—

1. A dumping-car comprising a tilting receptacle mounted upon a suitable truck or body frame, a side board arranged to close the open side of the receptacle when the latter is in a horizontal position, the side board having arms which are pivotally connected with the said receptacle, and suitable supports or stops being provided for supporting the arms during the tilting of the receptacle; the point of contact between the stops and arms shifting lengthwise of the latter as the receptacle tilts to one side, and the side board thereby serving at such time to counterbalance the load.

2. A dumping-car comprising a tilting receptacle mounted upon a truck or body frame, and a couple of side boards arranged to close the opposite sides of the receptacle when the same is in a horizontal position, the said side boards being pivotally connected with the said receptacle by means of suitable arms or bars, and supports or stops being provided for supporting the arms of either side board according to the side from which it is desired to dump; the side board at the side from which the load is discharged being supported against downward movement at such time by the said stops, and the opposite side board being carried upward and remaining in place at the side of the receptacle; the point of contact between the stops and the arms of the released side board shifting lengthwise of the latter as the receptacle tilts, and the said side board thereby serving to counterbalance the load during the tilting of the receptacle.

3. A dumping-car comprising a tilting receptacle mounted upon a suitable truck or body frame, a side board pivotally connected with the end board by means of suitable arms, and a couple of rolls mounted upon the truck or body frame and adapted to support the said arms during the tilting of the receptacle, the point of contact between the rolls and arms shifting lengthwise of the latter as the receptacle tilts.

4. In a dumping-car, the combination of a suitable truck or body frame; a receptacle mounted thereon and constructed to tilt about a longitudinal axis, the axis being located at a point beneath the said receptacle; a couple of side boards having arms which are pivotally connected to the end boards at points above the axis about which the receptacle tilts; and rolls rotatably mounted upon the truck or body frame and arranged to engage and support the arms of either side

board during the tilting of the receptacle, according to the side from which the load is discharged.

5 5. A dumping-car comprising a suitable truck or body frame and a receptacle mounted thereon, the said receptacle being arranged to tilt about a longitudinal axis, and each side of the receptacle being provided with a truss, the latter consisting of the angle-iron D, the two blocks D', and the truss-rod D², substantially as and for the purpose described.

15 6. A dumping-car comprising a suitable truck or body frame and a tilting receptacle mounted thereon, the center of the receptacle being supported by a plurality of pivot-bearings, and each side portion of the receptacle-floor being provided with a truss consisting of a longitudinally-extending angle-iron, a couple of blocks provided with recesses adapted to receive and engage the opposite ends of the said angle-iron, and a truss-rod having its opposite end portions extended through and secured to each of the said recessed blocks.

25 7. A dumping-car comprising a suitable truck or body frame, a receptacle mounted

upon said body-frame and arranged to tilt about a longitudinal axis, a couple of automatic side boards arranged to normally close the opposite sides of the receptacle, the said boards being provided with arms which are pivotally connected with the end boards of the receptacle, and a roll being mounted below each arm in such manner as to support and traverse a portion of the length of the arms of the released side board during the tilting of the receptacle.

8. A dumping-car comprising a suitable truck or body frame; a tilting receptacle mounted upon said frame and arranged to tilt about a horizontal axis; a couple of automatic side boards C having arms *c* pivotally connected with the end boards of the receptacle; a couple of frame-pieces *a*⁴ mounted upon the end portions of the truck or body frame, and provided with the rolls *a*³, substantially as and for the purpose described.

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