

No. 747,762.

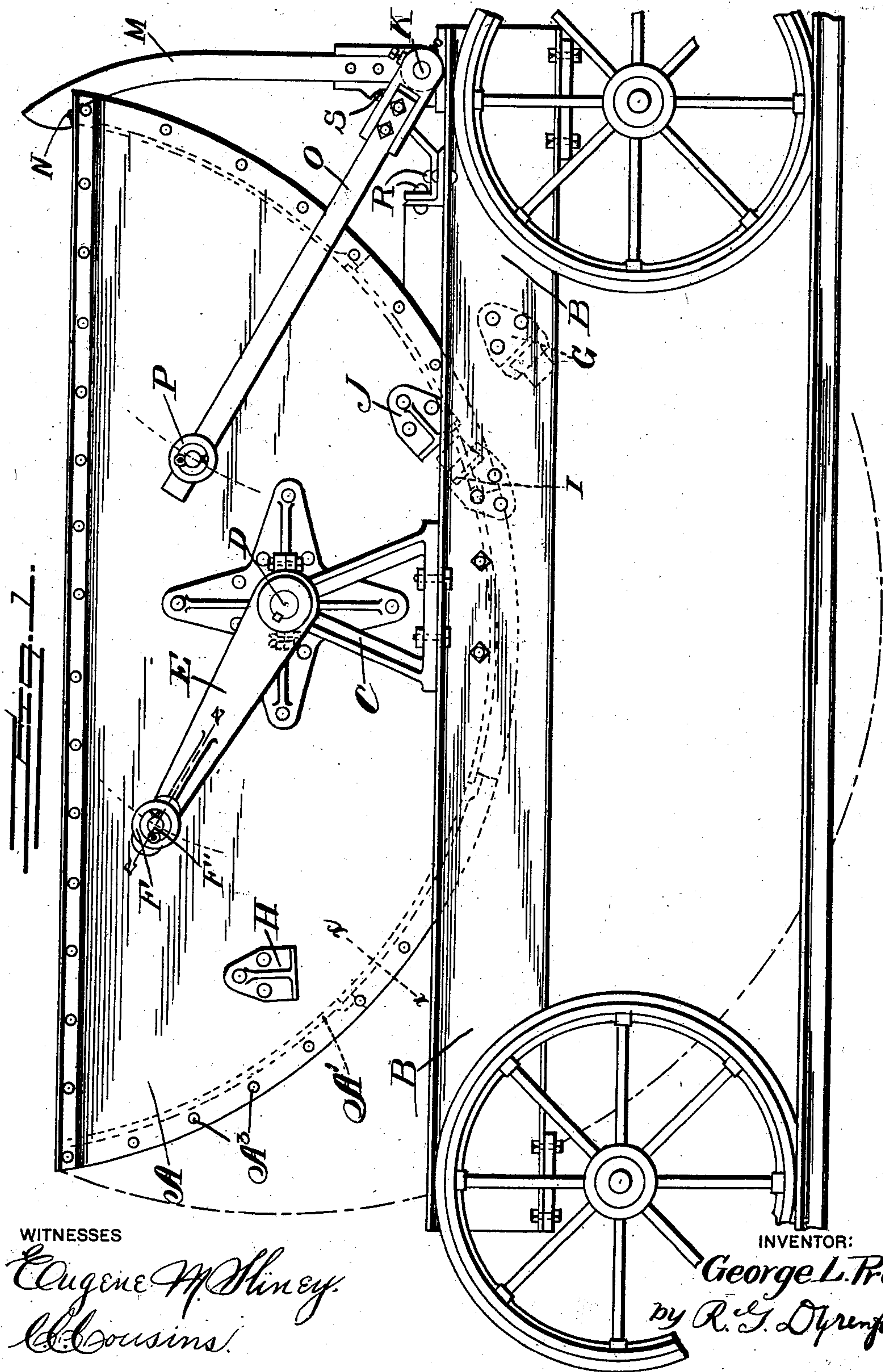
PATENTED DEC. 22, 1903.

G. L. PRATT.  
DUMP CAR.

APPLICATION FILED MAY 29, 1903.

NO MODEL.

3 SHEETS—SHEET 1.



WITNESSES

*Eugene M. Shiley.*  
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INVENTOR:

*George L. Pratt,*  
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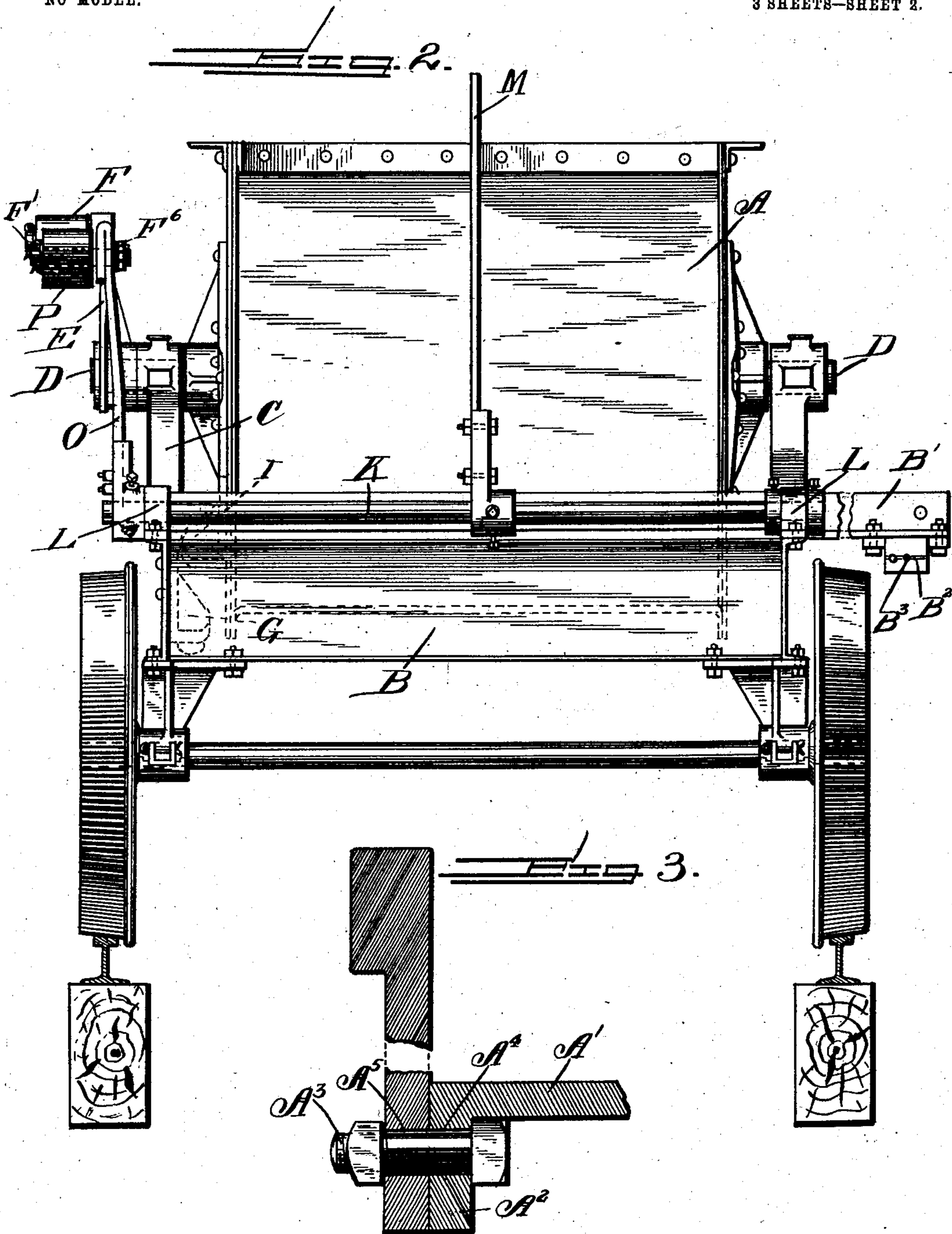
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3 SHEETS—SHEET 2.



WITNESSES

*Eugene W. Shiley.*  
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# UNITED STATES PATENT OFFICE.

GEORGE L. PRATT, OF ATLANTA, GEORGIA.

## DUMP-CAR.

SPECIFICATION forming part of Letters Patent No. 747,762, dated December 22, 1903.

Application filed May 29, 1903. Serial No. 159,330. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE L. PRATT, a citizen of the United States, residing at Atlanta, in the county of Fulton and State of Georgia, have invented certain new and useful Improvements in Dump-Cars; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The object of my invention is to provide a dump-car which shall be positive and certain in action and of durable construction.

To these ends my invention consists in the constructions and combinations hereinafter described and claimed.

In the accompanying drawings, forming a part of this application, and in which similar reference-letters indicate corresponding parts in the several views, Figure 1 is a side elevation of my improved dump-car, the paths of the dump and latch levers being indicated in dotted lines. Fig. 2 is an end elevation thereof. Fig. 3 is a detail sectional view taken on a plane indicated by line *x x* of Fig. 1. Fig. 4 shows my cam-rail with the dump-lever and latch-lever in engagement therewith, the dump-car being indicated diagrammatically in broken lines; and Fig. 5 is a detail sectional view taken on a plane indicated by line *z z* of Fig. 1.

Referring now to the drawings in detail, A indicates the car-body, which I preferably construct of cast-iron, but which may be constructed of any other suitable material.

B is the car-frame, carrying standards C, in which are journaled the trunnions D of the car-body. The trunnions D are positioned on the car-body in a plane intermediate its center of gravity and the latch end, whereby the unbalanced car-body tends to swing on said trunnions into dumping position.

Under some practical conditions the floor of the car-body is subjected to great local wear at the portion on which the incoming charge impinges. This wear may be due to the corrosive nature of the charge or merely to its abrading action. With such conditions the car-body speedily wears out at the point where the incoming charge impinges before the remainder of the car-body begins to show any material wear, thus necessitating the ex-

pense of frequently discarding car-bodies showing wear at only one portion. To obviate this, I construct the car-floor of a series of removable plates A', each plate being provided with an offset at one end constructed to support the contiguous end of the next adjacent plate, as clearly shown in Fig. 1. These plates are provided with flanges A<sup>2</sup> at their ends and are removably secured in the car-body by bolts A<sup>3</sup> inserted in holes A<sup>4</sup> A<sup>5</sup>, formed, respectively, through said flanges and through the sides of the car-body, as shown in Figs. 1 and 3.

It will be observed that the bolts A<sup>3</sup> are positioned entirely outside of the interior of the car-body, thereby obviating the projection of bolt-heads on the smooth interior surface of the car-body and also removing the bolts from action by the charging materials. In this construction any floor-plate showing excessive wear can be quickly removed and replaced by a new floor-plate taken from the stock kept on hand.

E is the dump-lever, shown secured to one of the trunnions at a point outside its journal and preferably provided with a friction-roller F.

K is a shaft journaled in boxes L L on the frame B and carrying a latch M, provided with a lip N, arranged to lock the car-body from dumping. While the latch is shown engaging the upper edge of the car-body, it could obviously be arranged to engage any convenient portion of said body.

O is a latch-lever secured to the shaft K and preferably provided with a friction-roller P. The friction-rollers F and P are shown adjustably secured to their levers. (See Fig. 5.)

E' is a slot formed in the dump-lever E for receiving the roller-pin F', which carries the roller F. The pin F' is provided with a shoulder F<sup>4</sup> to engage a washer F<sup>2</sup> at one side of the dump-lever, and a nut F<sup>6</sup> on the pin bearing against a washer F<sup>3</sup> secures the roller in its adjusted position on the dump-lever. A stop S is secured on the frame B, as by rivets R, in position to bear against the latch M and insure its being held in proper latching position.

G is a buffer carried by the frame B and arranged to engage a stop H, secured to the car-body, when the body reaches its extreme



dumping position. The buffer G acts to limit the swing of the car-body in dumping and also to jar the car, and thus aid in the discharge of its contents.

5 I is a second buffer carried by the frame B and arranged to engage a stop J, secured to the car-body, when the body is returned for latching.

10 B' indicates an extension from the car-frame B, provided with means, such as jaws B<sup>2</sup>, for gripping the usual traveling cable B<sup>3</sup>. While I have herein shown a traveling cable for moving the dump-car along its track, any other old means may be employed therefor.

15 Referring especially to Fig. 4, T indicates a cam-rail, shown rigidly secured to a suitable frame U. A plank may be employed for the frame U, or such frame may be formed of metal or any other suitable material. The 20 frame U is adjustably secured to the supports W, as by slots V in the frame fitting over bolts Q on said supports, nuts Z being employed securely to lock the frame U in its adjusted position on the supports W. The 25 cam-rail T is preferably constructed with two inclines T' and T<sup>3</sup> and a substantially horizontal portion T<sup>2</sup>. In Fig. 4 the dump and latch levers are shown engaging said cam-rail, the direction of travel of the loaded dump-car 30 being indicated by the arrow.

In the operation of my apparatus the dump-car, suitably positioned on its track and with the car-body engaged by the latch M, is charged in any convenient manner, as from 35 an overhead hopper. The loaded car is then caused to travel along its track to the point of dumping, the dump and latch levers being actuated during such travel by the cam-rail T, placed adjacent the car-track intermediate the charging and dumping points. Dur- 40 ing such advance of the loaded car the dump-lever E first engages the incline T', thereby swinging the car-body sufficiently on its trunnions to lower the latch end thereof out of engagement with the latch-lip N. The 45 dump-lever then travels in engagement with the portion T<sup>2</sup> of the cam-rail, and simultaneously the latch-lever rides up the incline T', thereby oscillating the latch sufficiently to swing its lip out of latching position. Finally the dump-lever descends the 50 incline T<sup>3</sup>, thereby permitting the car-body to swing into dumping position. During the first portion of such descent of the dump-lever the latch-lever travels in engagement with the portion T<sup>2</sup> of the cam-rail, thereby maintaining the latch out of latching position until the latch end of the car-body has swung up beyond the path of the latch-lip. 55 The latch-lever then descends along incline T<sup>3</sup> until the latch swings into contact with its stop S, when further oscillation of said latch and its lever is prevented by said stop. During the reverse travel of the empty car to 60 bring it again into charging position the latch-lever being held elevated by the stop S engages only the higher portion of the incline

T<sup>3</sup>. The latch-lever then rides up the higher portion of incline T<sup>3</sup> and along portion T<sup>2</sup> of the cam-rail, thereby oscillating the latch and 70 maintaining it out of latching position. Meanwhile the dump-lever has ridden to the upper end of incline T<sup>3</sup>, thus swinging the car-body sufficiently to bring the latch end thereof slightly below its position for engagement 75 with the latch-lip N. The dump-lever then travels in engagement with the portion T<sup>2</sup> of the cam-rail, which maintains the latch end of the car-body slightly below its position for engagement with the latch-lip, and simultaneously the latch-lever descends the incline T', 80 thereby oscillating the latch into latching position with its lip above the latch end of the car-body. Finally the dump-lever descends the incline T', thereby permitting the car- 85 body to swing sufficiently to bring its latch end into engagement with the latch-lip N. The car-body is thus latched in position and ready again to receive a charge, after which the above operation is repeated. 90

While in the construction illustrated the latch is arranged to be oscillated to its latching position by the weight of the latch-lever, it is obvious that springs or other equivalents could be employed therefor. It is also clear 95 that a continuous track could be employed for the dump-car by placing a second cam-rail in suitable position beyond the dumping-place.

Having thus described my invention, what 100 I claim as new, and desire to secure by Letters Patent, is—

1. In a dump-car, the combination of a car-body provided with trunnions, a dump-lever secured to one of said trunnions, a frame car- 105 rying bearings for said trunnions, a shaft journaled on said frame, a latch on said shaft and arranged to be oscillated into latching engagement with the car-body, a latch-lever secured to said shaft, and a cam-rail located 110 adjacent the path of travel of the dump-car and constructed to engage said dump and latch levers during the travel of the car, substantially as described.

2. In a dump-car, the combination of a car- 115 body provided with trunnions, a dump-lever secured to one of said trunnions, a frame carrying bearings for said trunnions, a shaft journaled on said frame, a latch on said shaft and arranged to be oscillated into latching 120 engagement with the car-body, a latch-lever secured to said shaft, means carried on said car arranged to grip a traveling member, and a cam-rail located adjacent the path of travel of the dump-car and constructed to engage 125 said dump and latch levers during the travel of the car, substantially as described.

3. In a dump-car, the combination of a car-body provided with trunnions, a dump-lever secured to one of said trunnions, a frame car- 130 rying bearings for said trunnions, a shaft journaled on said frame, a latch on said shaft and arranged to be oscillated into latching engagement with the car-body, a latch-lever



secured to said shaft, and an adjustable cam-rail located adjacent the path of travel of the dump-car and constructed to engage said dump and latch levers during the travel of the car, substantially as described.

4. In a dump-car, the combination of a car-body provided with trunnions, a dump-lever secured to one of said trunnions, a friction-roller adjustably secured on said lever, a frame carrying bearings for said trunnions, a shaft journaled on said frame, a latch on said shaft and arranged to be oscillated into latching engagement with the car-body, a latch-lever secured to said shaft, a friction-roller adjustably secured on said lever, and a cam-rail located adjacent the path of travel of the dump-car and constructed to engage said friction-rollers during the travel of the car, substantially as described.

5. In a dump-car, the combination of a car-body provided with trunnions, a dump-lever secured to one of said trunnions, a frame carrying bearings for said trunnions, a shaft journaled on said frame, a latch on said shaft and arranged to be oscillated into latching engagement with the car-body, a latch-lever secured to said shaft, and a cam-rail located adjacent the path of travel of the dump-car and constructed to engage said dump and latch levers during the travel of the car, said cam-rail comprising two inclines and an intermediary portion, the intermediary portion arranged substantially parallel with the neighboring path of the car and constructed of at least sufficient length to simultaneously engage both the dump-lever and latch-lever, substantially as described.

6. In a dump-car, the combination of a car-body provided with trunnions, a dump-lever secured to one of said trunnions, a frame carrying bearings for said trunnions, a shaft journaled on said frame, a latch on said shaft and arranged to be oscillated into latching engagement with the car-body, a latch-lever secured to said shaft, means carried on said car arranged to grip a traveling member, and a cam-rail located adjacent the path of travel of the dump-car and constructed to engage said dump and latch levers during the travel of the car, said cam-rail comprising two inclines and an intermediary portion, the intermediary portion arranged substantially parallel with the neighboring path of the car and constructed of at least sufficient length to simultaneously engage both the dump-lever and latch-lever, substantially as described.

7. In a dump-car, the combination of a car-body provided with trunnions, a dump-lever secured to one of said trunnions, a frame carrying bearings for said trunnions, a shaft journaled on said frame, a latch on said shaft and arranged to be oscillated into latching engagement with the car-body, a latch-lever secured to said shaft, and an adjustable cam-rail located adjacent the path of travel of the dump-car and constructed to engage said

dump and latch levers during the travel of the car, said cam-rail comprising two inclines and an intermediary portion, the intermediary portion arranged substantially parallel with the neighboring path of the car and constructed of at least sufficient length to simultaneously engage both the dump-lever and latch-lever, substantially as described.

8. In a dump-car, the combination of a car-body provided with trunnions, a dump-lever secured to one of said trunnions, a friction-roller adjustably secured on said lever, a frame carrying bearings for said trunnions, a shaft journaled on said frame, a latch on said shaft and arranged to be oscillated into latching engagement with the car-body, a latch-lever secured to said shaft, a friction-roller adjustably secured on said lever, and a cam-rail located adjacent the path of travel of the dump-car and constructed to engage said friction-rollers during the travel of the car, said cam-rail comprising two inclines and an intermediary portion, the intermediary portion arranged substantially parallel with the neighboring path of the car and constructed of at least sufficient length to simultaneously engage both the dump-lever and latch-lever, substantially as described.

9. In a dump-car, the combination of a car-body provided with trunnions, a dump-lever secured to one of said trunnions, a friction-roller adjustably secured on said lever, a frame carrying bearings for said trunnions, a shaft journaled on said frame, a latch on said shaft and arranged to be oscillated into latching engagement with the car-body, a latch-lever secured to said shaft, a friction-roller adjustably secured on said lever, and an adjustable cam-rail located adjacent the path of travel of the dump-car and constructed to engage said friction-rollers during the travel of the car, substantially as described.

10. In a dump-car, the combination of a car-body provided with trunnions, a dump-lever secured to one of said trunnions, a frame carrying bearings for said trunnions, stops and buffers carried by said car and said frame and arranged to limit the range of oscillation of the car on its trunnions, a shaft journaled on said frame, a latch on said shaft and arranged to be oscillated into latching engagement with the car-body, a latch-lever secured to said shaft, and an adjustable cam-rail located adjacent the path of travel of the dump-car and constructed to engage said dump and latch levers during the travel of the car, said cam-rail comprising two inclines and an intermediary portion, the intermediary portion arranged substantially parallel with the neighboring path of the car and constructed of at least sufficient length to simultaneously engage both the dump-lever and latch-lever, substantially as described.

11. In a dump-car, the combination of a car-body provided with trunnions, a dump-lever secured to one of said trunnions, a frame carrying bearings for said trunnions, a shaft



journaled on said frame, a latch on said shaft  
 and arranged to be oscillated into latching  
 engagement with the car-body, a latch-lever  
 secured to said shaft, and a cam-rail located  
 5 adjacent the path of travel of the dump-car  
 and constructed to engage said dump and  
 latch levers during the travel of the car, said  
 cam-rail comprising an intermediary mem-  
 ber and two inclines so constructed and ar-  
 10 ranged that, upon the advance of the loaded  
 car, the car-body will be turned out of latch-  
 ing contact with the latch, the latch then re-  
 moved from latching position, and the car-  
 body then turned back through its initial po-  
 15 sition to dumping position, substantially as  
 described.

12. In a dump-car, the combination of a  
 car-body provided with trunnions, a dump-  
 lever secured to one of said trunnions, a frame  
 20 carrying bearings for said trunnions, a shaft  
 journaled on said frame, a latch on said shaft  
 and arranged to be oscillated into latching  
 engagement with the car-body, a latch-lever  
 secured to said shaft, and an adjustable cam-  
 25 rail located adjacent the path of travel of  
 the dump-car and constructed to engage said  
 dump and latch levers during the travel of  
 the car, said cam-rail comprising an inter-  
 mediary member and two end inclines so con-  
 30 structed and arranged that, upon the ad-  
 vance of the loaded car, the car-body will be  
 turned out of latching contact with the latch,  
 the latch then removed from latching posi-  
 tion, and the car-body then turned back,  
 35 through its initial position, to dumping po-  
 sition, substantially as described.

13. In a dump-car, the combination of a car-  
 body provided with trunnions, a dump-lever  
 secured to one of said trunnions, a frame  
 40 carrying bearings for said trunnions, a shaft  
 journaled on said frame, a latch on said shaft  
 and arranged to be oscillated into latching  
 engagement with the car-body, a latch-lever  
 secured to said shaft, and a cam-rail located  
 45 adjacent the path of travel of the dump-car  
 and constructed to engage said dump and  
 latch levers during the travel of the car, said  
 cam-rail comprising an intermediary mem-  
 ber and two end inclines so constructed and  
 50 arranged that, upon the advance of the loaded  
 car, the car-body will be turned out of latch-  
 ing contact with the latch, the latch then removed  
 from latching position, and the car-body then  
 turned back, through its initial position, to  
 55 dumping position, said cam-rail constructed  
 to extend below the lowest positions of the  
 dump and latch levers, whereby, upon the  
 return of the empty car, the latch will be  
 swung out of the path of oscillation of the  
 60 car-body, the car-body then turned on its  
 trunnions slightly past the position it occu-

pies when engaged with the latch, the latch  
 then swung into its latching position, and the  
 car-body then turned back to bring it into  
 latching engagement with the latch, substan- 65  
 tially as described.

14. In a dump-car, the combination of a car-  
 body provided with trunnions, a dump-lever  
 secured to one of said trunnions, a frame  
 carrying bearings for said trunnions, a shaft 70  
 journaled on said frame, a latch on said shaft  
 and arranged to be oscillated into latching  
 engagement with the car-body, a latch-lever  
 secured to said shaft, and an adjustable cam-  
 rail located adjacent the path of travel of the 75  
 dump-car and constructed to engage said  
 dump and latch levers during the travel of  
 the car, said cam-rail comprising an inter-  
 mediary member and two end inclines so con-  
 structed and arranged that, upon the advance 80  
 of the loaded car, the car-body will be turned  
 out of latching contact with the latch, the  
 latch then removed from latching position,  
 and the car-body then turned back, through  
 its initial position, to dumping position, said 85  
 cam-rail constructed to extend below the  
 lowest positions of the dump and latch levers,  
 whereby, upon the return of the empty car,  
 the latch will be swung out of the path of os-  
 cillation of the car-body, the car-body then 90  
 turned on its trunnions slightly past the po-  
 sition it occupies when engaged with the  
 latch, the latch then swung into its latching  
 position, and the car-body then turned back  
 to bring it into latching engagement with the 95  
 latch, substantially as described.

15. In a dump-car, the combination of a car-  
 body provided with trunnions, a frame carry-  
 ing bearings for said trunnions, means ar-  
 ranged to swing the car-body on said trun- 100  
 nions, said car-body constructed with a re-  
 movable, sectional floor, comprising interen-  
 gaging plates, and means for removably se-  
 curing said plates in position, substantially  
 as described. 105

16. In a dump-car, the combination of a car-  
 body provided with trunnions, a frame carry-  
 ing bearings for said trunnions, a removable,  
 sectional floor in said car, comprising a plu-  
 110 rality of plates, each plate constructed with  
 an offset at one end constructed to overlap  
 the contiguous end of the next adjacent plate,  
 flanges depending from the two sides of each  
 plate, and bolts arranged removably to se-  
 cure such plates in position, substantially as 115  
 described.

In testimony whereof I affix my signature  
 in the presence of two subscribing witnesses.

GEORGE L. PRATT.

Witnesses:

E. T. BRANDENBURG,  
 G. AYRES.