

(No Model.)

C. W. RAYMOND.
DUMPING CAR.

No. 421,432.

Patented Feb. 18, 1890.

Fig. 1.

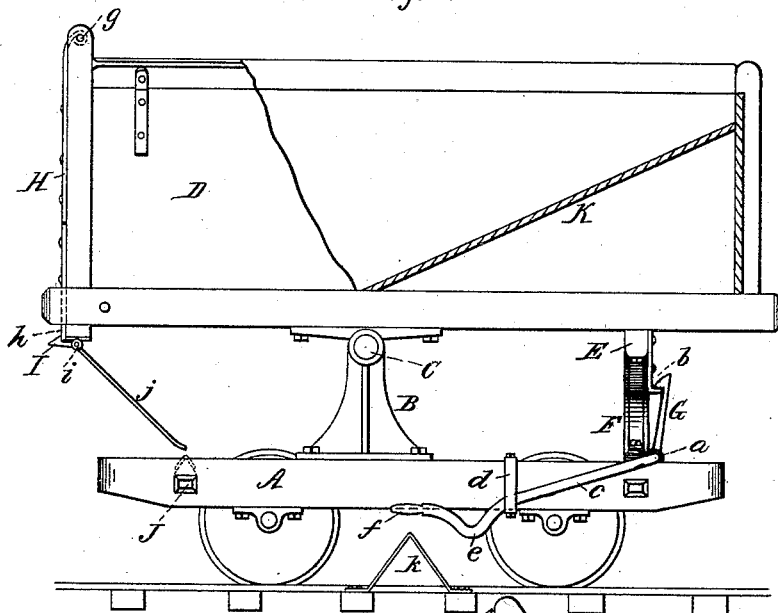


Fig. 3.

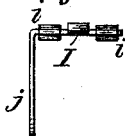


Fig. 2.

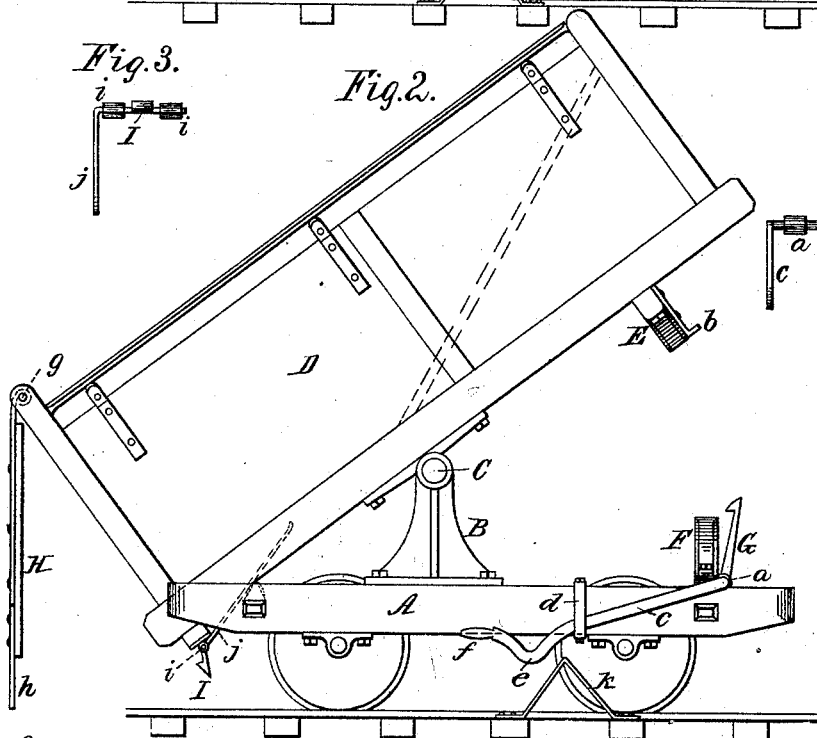
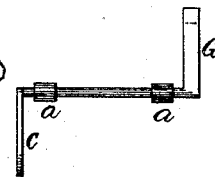


Fig. 4.



Witnesses:
W. C. Jirdingston.

Charles Billon.

Inventor:
Charles W. Raymond
by *Peck & Reister*
his Attorneys.

UNITED STATES PATENT OFFICE.

CHARLES W. RAYMOND, OF DAYTON, OHIO.

DUMPING-CAR.

SPECIFICATION forming part of Letters Patent No. 421,432, dated February 18, 1890.

Application filed December 21, 1888. Serial No. 294,249. (No model.)

To all whom it may concern:

Be it known that I, CHARLES W. RAYMOND, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Dumping Cars and Carts, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

While my invention is applicable to nearly all classes of dumping cars or carts, it is designed more particularly for tramway dumping-cars for conveying clay to pug-mills or coal to the top of inclined chutes or other dumping-point. Its novelty will be herein set forth, and distinctly pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation of a car embodying my invention and partly in section. Fig. 2 is a corresponding view of the car tilted as in the act of dumping. Fig. 3 is a detail front elevation of the gate-latch. Fig. 4 is a detail rear elevation of the car-body latch.

The same letters of reference are used to indicate identical parts in all the figures.

The truck A of the car may be of the usual or any suitable construction, and it has upon each side a journal-standard B, to which, by means of trunnions C, the car-body D is hung. The car-body is hung sufficiently high above the truck to give the proper inclination in dumping; and when in a horizontal or normal position its rear cross-timber E rests upon a coincident timber or bolster F upon the truck. A spring or weighted latch G, Figs. 1, 2, and 4, is pivoted to the truck by journals or boxes a and engages with a catch b, secured to the car-body—in this instance to the timber E—and serves to hold the car-body locked in its horizontal position. A tripping-arm c, attached to or integral with the latch G, extends along one side of the truck, and is in this instance confined in a guide d and provided with the downwardly-bent elbow e and grasping-handle f.

The end-gate H is hung, as at g, in the usual or any suitable manner—in this instance by strap-hinges—upon a rod extending across the top of the car-body, and it is held locked, when the car-body is horizontal, by a pendent

catch h, engaged by a spring or weighted latch I, Figs. 1, 2, and 3, pivoted to the under side of the car-body, as at i, and provided with a downward and rearwardly extending tripping-arm j, whose lower end is in close proximity to the forward cross-timber J of the truck.

One of the principal features of my invention consists in so constructing and hanging the car-body that when loaded its center of gravity will be on the dumping side of its pivotal support and when empty it will be on the opposite side of said support, so that when the latch which holds the loaded body in a horizontal position is released the body will tilt to dump its load, and when emptied will automatically reset itself to a horizontal position. This result may be accomplished in a variety of ways by so constructing and arranging the pivoted car-body that it is heavier on its side opposite the dumping side, but has the greater part of its carrying-space on the dumping side of its pivotal support, so that when loaded the extra weight of the load on the dumping side will overcome the extra weight of the body on the opposite side and shift the center of gravity to the dumping side; but when emptied the center of gravity will shift back to the opposite side to cause the car to reset itself. The method I have illustrated for accomplishing this result consists in providing that side of the car-body opposite the dumping side with an inclined bottom K and arranging the pivotal support of the body on the dumping side of the center of the body, as seen in Figs. 1 and 2. It results from this construction that when the car-body is loaded the center of gravity is on the dumping side of the pivotal support of the body, and that when empty it is on the opposite side of said support. As another method of accomplishing the same result and dispensing with the inclined bottom, the pivotal support of the body might be moved to that side of the center opposite the dumping side and that side be made heavier than the dumping side by means of weights or otherwise, which weights, when the body was loaded, would be overcome by the extra weight of the greater part of the load on the dumping side of the pivotal support; or, instead of making the side opposite the dumping side heavier, the car

might be provided with springs which would hold the body in a horizontal position when empty, but whose pressure when the body was loaded would be overcome by the greater weight of the load on the dumping side of the body. I prefer the construction employing the inclined bottom, however, for the latter facilitates the dumping of the load when the car-body is tilted.

The operation of the car illustrated in Figs. 1 and 2 is as follows: Supposing the body to be loaded and locked in a horizontal position with its end-gate closed and latched, the car is moved by any suitable means to the point where it is desired to dump its load, and the latch *G* is disengaged from the catch *b*, either by hand or automatically, by the shoulder *e* striking the stationary trip *k* and raising the tripping-arm *c*. The car-body, being thus released, at once begins to tilt toward the dumping side, owing to the greater weight being on that side of its pivotal support, and the arm *j* of the latch *I*, coming in contact with the cross-timber *J*, disengages the latch *I* from the gate-catch *h*, thus unlocking the gate *H* and permitting it to swing open as the body tilts to the position shown in Fig. 2 to dump its load. As soon as the load is discharged, that side of the body having the inclined bottom being now become the heavier, the body tilts back and resets itself to a horizontal position, the end-gate swinging in and becoming relocked and the catch *b* engaging with the latch *G*, as will be readily understood.

It is of course obvious that the car-body may be hung so as to dump sidewise instead of endwise, in which event the gate would be upon the side instead of the end of the body.

While I have shown and described my improved dumping-car as entirely automatic in the operation of all its parts, and while for some purposes such construction is highly advantageous, yet it is not an essential feature of my invention that all of the parts of the car should operate automatically. Thus in many cases there will be no necessity for automatically releasing the latch *G*, and in some instances this latch need not be arranged to automatically lock the body when the latter is reset to its horizontal position. Again, many features of the invention may be advantageously used in a dumping-car which is not arranged to automatically reset itself after dumping its load, as where the pivotal support is arranged on that side of the center of the body opposite the dumping side, so that when released the loaded body will tilt to dump its load, but will remain in tilted position until reset by hand. In such cases, especially, can the automatic locking feature of the latch *G* be dispensed with without serious inconvenience. For instance, such a construction can be used to advantage in a car which is moved back and forth along a tramway from loading to dumping-points by means of a cable, in which event it can be

loaded, run out to the dumping-point without any attendant going with it, the body be automatically released by the stationary trip, tilted and its load dumped, and be pulled back to the loading-point in its tilted position and be there reset to and locked in a horizontal position by the attendants who load it.

In some instances the car-body may be of such construction that it need have no end-gate, and where an end-gate is employed the latch *I*, arranged to automatically unlock it when the body is tilted, may be employed with advantage, whether the operation of the other parts of the car are automatic or not.

Having thus fully described my invention, I claim—

1. In a dumping-car, the car-body pivoted between its ends, and having its side opposite the dumping side made heavier than the dumping side, and having the larger part of its carrying-space on the dumping side of its pivotal support, whereby when the car is loaded its center of gravity will be on the dumping side of said support, and when empty it will be on the opposite side of said support, substantially as and for the purpose described.

2. In a dumping-car, the pivotally-supported car-body having its side opposite the dumping side made heavier than the dumping side, and having the larger part of its carrying-space on the dumping side of its pivotal support, for the purpose described, in combination with a device for releasably holding said body in a horizontal position when loaded.

3. In a dumping-car, the pivoted car-body having its side opposite the dumping side made heavier than the dumping side and having the larger part of its carrying-space on the dumping side of its pivotal support, for the purpose specified, in combination with a latch arranged to automatically lock said body when brought to horizontal position and hold it in such position when loaded, whereby upon disengaging said latch the body will tilt itself to dump its load, and when emptied will automatically reset and lock itself, substantially as described.

4. In a dumping-car, the pivotal car-body having its side opposite the dumping side made heavier than the dumping side and having the larger part of its carrying-space on the dumping side of its pivotal support, for the purpose specified, and provided with a swinging end-gate, in combination with a latch for holding the body in horizontal position when loaded, and a latch for holding the end-gate closed, arranged to automatically release said gate when the body is tilted, whereby upon releasing the latch for holding the body in horizontal position when loaded the body will be tilted and the end-gate released and swung open to permit the load to be dumped, and whereby when the load has been dumped the car-body will auto-

matically reset itself to horizontal position, substantially as described.

5 5. In a dumping-car, the pivotal car-body having its side opposite the dumping side made heavier than the dumping side and having the larger part of its carrying-space on the dumping side of its pivotal support, for the purpose specified, and provided with a swinging end-gate, in combination with a
10 latch arranged to automatically lock said body when brought to a horizontal position and to hold it in such position when loaded, and a latch arranged to automatically lock the end-gate when the body is brought to a
15 horizontal position and to automatically unlock said gate when the body is tilted, whereby upon releasing the latch which holds the body in horizontal position when loaded the body will be tilted and the end-gate auto-
20 matically unlocked to permit the load to be dumped, and when emptied the body will be automatically reset to and locked in horizontal position and the end-gate closed and locked, substantially as described.

25 6. In a dumping-car, the pivotal car-body having its side opposite the dumping side provided with an inclined bottom and having the larger part of its carrying-space on the dumping side of its pivotal support, whereby
30 when loaded its center of gravity will be on the dumping side of its pivotal support and when empty it will be on the opposite side of said support, for the purpose described.

35 7. In a dumping-car, the pivotal car-body having its side opposite the dumping side provided with an inclined bottom, and having the larger part of its carrying-space on the dumping side of its pivotal support for the purpose specified, and provided with a swing-
40 ing end-gate opposite the inclined bottom, in combination with a latch for holding the body in horizontal position when loaded, and a latch for holding the end-gate closed and arranged to automatically release said gate
45 when the body is tilted, substantially as described.

50 8. In a dumping-car, the pivoted car-body having its side opposite the dumping side provided with an inclined bottom, and having the larger part of its carrying-space on the dumping side of its pivotal support for the purpose specified, and provided with a swing-
ing end-gate opposite the inclined bottom, in combination with a latch arranged to auto-

55 matically lock said body when brought to a horizontal position, and to hold it in such position when loaded, and a latch arranged to automatically lock the end-gate when the body is brought to a horizontal position and to automatically unlock said gate when the
60 body is tilted, substantially as described.

9. In a dumping-car, the pivoted car-body having its side opposite the dumping side made heavier than the dumping side, and hav-
65 ing the larger part of its carrying-space on the dumping side of its pivotal support, for the purpose specified, in combination with a latch for holding said body in horizontal position when loaded, and arranged to be auto-
70 matically released by a stationary trip located near the dumping-point, substantially as described.

10. In a dumping-car, the pivoted car-body having its side opposite the dumping side made heavier than the dumping side, and hav-
75 ing the larger part of its carrying-space on the dumping side of its pivotal support, for the purpose specified, and provided with a swinging end-gate, in combination with a latch for locking said gate arranged to auto-
80 matically unlock it when the body is tilted to dump its load, and a latch arranged to hold the body in a horizontal position when loaded, and to be automatically released by a sta-
85 tionary trip located near the dumping-point, substantially as described.

11. In a dumping-car, the combination and arrangement of the body D, pivoted on the supports B, and provided with an inclined
90 bottom K, and swinging end-gate H, the latch I, engaging with the end-gate, and the latch G for holding the body in horizontal position when loaded, substantially as and for the pur-
pose described.

12. In a dumping-car, the combination and
95 arrangement of the body D, pivoted on the supports B, and provided with an inclined bottom K, and swinging end-gate H, the piv-
oted latch I, engaging with said end-gate, and the pivoted latch G for holding the body in
100 horizontal position when loaded, and connected to the tripping-arm c, arranged to engage with the trip k to release said latch, substantially as and for the purpose described.

CHARLES W. RAYMOND.

Witnesses:

WALTER D. JONES,
SAMUEL MCKEE.