

J. G. PAYSON.
Dumping-Cars.

No. 140,534.

Patented July 1, 1873.

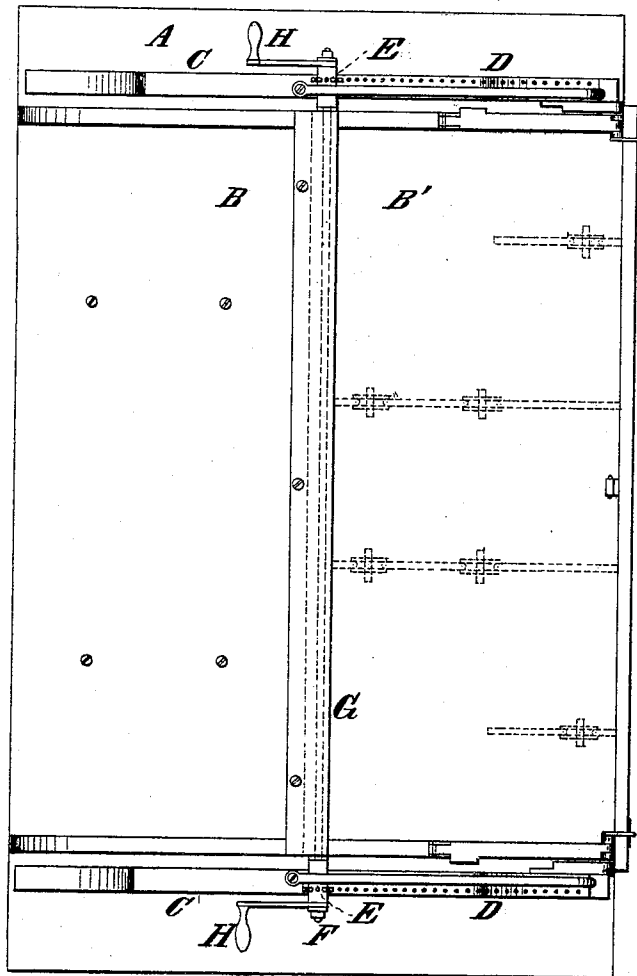


Fig. 1.

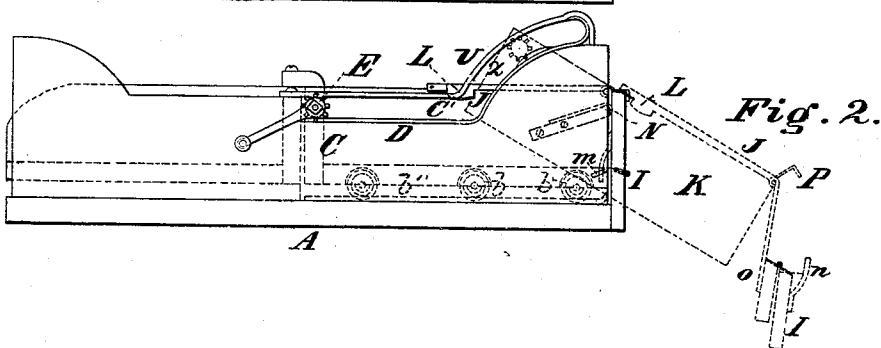


Fig. 2.

Witnesses.

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JAMES G. PAYSON, OF FOXBOROUGH, MASSACHUSETTS.

IMPROVEMENT IN DUMPING-CARS.

Specification forming part of Letters Patent No. **140,534**, dated July 1, 1873; application filed June 14, 1873.

To all whom it may concern:

Be it known that I, JAMES G. PAYSON, of Foxborough, in the county of Norfolk and State of Massachusetts, have invented a new and valuable Improvement in Dumping-Cars; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings making a part of this specification and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a top view of my invention. Fig. 2 is an end view of my invention.

My invention has relation to railroad dumping-cars; and it consists in the construction and novel arrangement of devices, by means of which the car-body is moved sidewise, and then tilted; also, in the construction and novel arrangement of devices, by means of which the automatic unlocking and relocking of the tail-board is effected, all substantially as hereinafter more fully described.

My improvements apply to dumping-cars of all sizes and for all purposes.

In the accompanying drawings, A designates the bed of a dumping-car, and B B' the car-body, which the drawings show as divided into two sections, running lengthwise of the car. Both, or one only, of these sections may be arranged to dump, or the car may be provided with one large body capable of being tilted. On the bottom of the movable section B' rollers *b* are arranged, either in the order shown, or in any equivalent manner. These rollers have grooved peripheries, and travel upon rails *b'*, of convex form, and laid upon the car-bed in a transverse direction. C designates ways, between which the section B' moves. The outer portions of these ways adjacent to the side of the car over which the section B' tilts are raised and formed, with their upper surfaces convex, the convexity beginning at the end of the horizontal sections of the upper parts of said ways, thence rising and terminating at the ends of said ways, where they reach their greatest height, as clearly shown in Fig. 2. Upon these ways are placed and secured the coinciding perforated plates or racks D, which constitute the bearings for the spiked rollers E. The rollers

E are rigidly secured to the end of a shaft, F, which passes through the back board G of the section B'. Cranks H are also attached to the ends of said shaft. By turning said cranks the rollers E are made to revolve. The spikes then enter the perforations of the plates or racks D, and cause the section B' to move toward the side of the car. Toothed racks and pinions may be employed in lieu of the perforated plates and spiked rollers, but I prefer the latter, for the reason that they may be made wide and a good rolling-surface provided for the rollers. These rollers serve as a support to the inner or back part of the section B', and enable the latter to be moved with less rollers upon the bottom than would otherwise be required. When the rollers E reach the curved part of the perforated plates the section B' has moved sufficiently to project about half-way over the edge of the bed A. Now, as the rollers rise upon these curves the section B' turns, its inner or back part rising, and its front or side falling, until said section is properly tilted. U designates guards running in a line with and above the plates D. The rollers E move along under said guards, which should be made wide enough to protect the plates from gravel or other material which in loading the car would have a tendency to fall upon and cover said plates. At their outer ends the guards are bent down, and serve as stops to the rollers. When made wide the guards should have channels cut in their under sides to allow the spikes on the rollers to pass. Near the highest part of the curved section of each guard-plate E a rise or slight convex protuberance, Z, is formed, so that as the rollers ascend, and the overbalancing of the section B' tends to increase the speed, the former will have their movements sufficiently arrested to prevent concussion. The section or car-body B' is raised and brought back by reversing the movement of the rollers E.

The object in view in running the shaft F the whole length of the car is to preserve an uniformity of motion at both ends, so that when two persons are working at the cranks one may not get ahead of the other, and thereby cause strain or tightening of parts. It is not essential that the shaft F should run

through the board G. I thus arrange it in order that it may be protected from being injured by contents of the car, or its motion obstructed by obstacles. When the entire car-body is intended to tilt the shaft F may either be run underneath or through the bottom and connected to the rollers by gearing, or it may be run through the body of the car and protected by a tube or casing.

I designate the tail-board, hinged at the upper part to the ends of arms J, which are pivoted on the edges of the end pieces K. From the outer part of each arm J depends a convex lug, L. As the section B' moves outward these lugs travel over inclined cams N attached to the ways C, and are raised, causing the tail-board to be lifted until the hooks *n* are released from the pins *m*. When this result is obtained, the action occurring just as the car commences to tilt, the tail-board hangs loosely, and is opened as far as required by the force of the falling contents of the car. The tail-board regains its position and relocks itself when the car is upraised. O represents the cleats, by means of which the tail-board is hinged to the arms J. The tail-board is in two parts, hinged together. The cleats O are secured, by bolts, to the lower part, and to upper part by pivoted hooks P, by lifting which the upper part may be let down.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The partly-horizontal and partly-curved tracks C' D, secured on the end walls of the bed-section A, in combination with the bearing-rollers E, arranged at the rear of the dumping-section, substantially as specified.

2. The brake-protuberances Z, arranged on the convex portions C' of the tracks, in combination with the rollers E, substantially as and for the purpose specified.

3. The combination, with the tracks C' D and pinions E, of the guards U, substantially as specified.

4. The combination, with the tail-board latch *n*, of the cam N and arm J, having a suitable lifting-lug, L, substantially as specified.

5. The combination, with the dumping-section B', having a shaft, F, with end rollers, of the bed-section A, having the dumping-tracks C' D, substantially as specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

JAMES G. PAYSON.

Witnesses:

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JOS. B. LOOMIS.