(No Model.)

H. S. BERNHART & I. R. RITTER.

DUMPING WAGON.

No. 284,368. Patented Sept. 4, 1883.

Fig. 3.

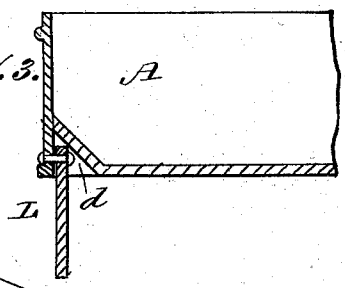


Fig. 1.

Fig. 2.

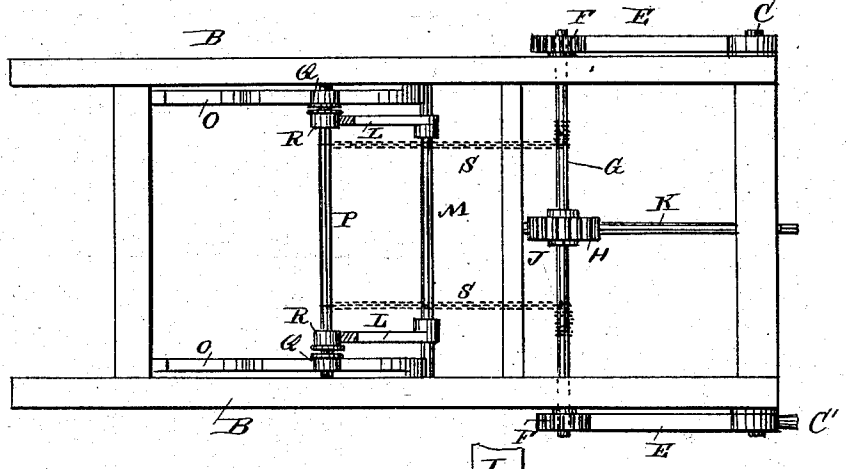
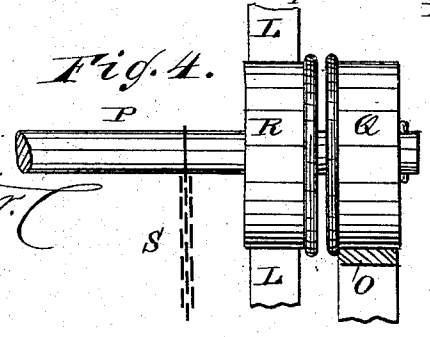


Fig. 4.



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UNITED STATES PATENT OFFICE.

HENRY S. BERNHART AND ISAAC R. RITTER, OF READING, PENNSYLVANIA.

DUMPING-WAGON.

SPECIFICATION forming part of Letters Patent No. 284,368, dated September 4, 1883.

Application filed January 4, 1883. (No model.)

To all whom it may concern:

Be it known that we, HENRY S. BERNHART and ISAAC R. RITTER, both of Reading, in the county of Berks and State of Pennsylvania, have invented a new and Improved Dumping-Wagon, of which the following is a full, clear, and exact description.

The object of our invention is to facilitate the dumping of the contents of a wagon or a cart.

The invention consists in a dumping-wagon which can be raised at the rear end by quadrant-racks mounted on the frame of the wagon and connected with the box, and at the front end by arms pivoted to the frame and to the box, which arms rest against rollers on a transverse shaft provided with rollers resting on tracks on the frame, which shaft is connected by chains with a transverse shaft on which are mounted the pinions for operating the quadrant-racks when the said shaft is turned. Both the front and rear ends of the wagon can be raised, or the front end only can be raised, by disengaging the quadrant-racks from the pinions, for by turning the said shaft the chains will be wound on the same, and will draw the shaft provided with the rollers, and which forms a truck with the said rollers, toward the rear end of the wagon-frame, and will thus swing the arms connected with the box upward.

The invention also consists in combinations of various parts and details, as will be fully described and set forth hereinafter.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a longitudinal elevation of our improved dumping-wagon, showing the front end of the box raised. Fig. 2 is a plan view of the wagon-frame, showing the box removed. Fig. 3 is a detail cross-sectional elevation of the box. Fig. 4 is a detail elevation of the roller for operating the pivoted arms that raise the front end of the box.

The wagon-box A is constructed with a flat bottom, which is slightly inclined upward at the longitudinal sides, whereby recesses *d* will be formed in the bottom of the box along the sides, as shown in Fig. 3. The box A rests upon a wagon-frame, B, supported by wheels in the usual manner. At the rear end of the frame B a transverse shaft, C, is journaled, the ends of the said shaft projecting from the sides of the frame B, and the said shaft is provided at each end with an eccentric bushing, D, on each of which a quadrant-rack, E, is loosely mounted in such a manner that the racks extend toward the front end of the box. The upper arm of each rack E is provided at the free end with a slot, *a*, through which a pintle or stud, *b*, passes into the side of the box A, as shown in Fig. 1. The quadrant-racks E are adapted to engage with pinions F, mounted rigidly on the ends of a transverse shaft, G, journaled in the frame B, on which shaft G is also mounted a worm-wheel, H, engaging with a worm, J, mounted on a shaft, K, journaled in hangers on the bottom of the frame B in such a manner that the said shaft K will be parallel with the longitudinal axis of the frame. A squared end of the said shaft projects from the rear end of the frame, so that a key can be applied on this squared end of the said shaft for the purpose of turning the shaft. Two arms, L, are pivoted at their upper ends to the inner surfaces of the sides of the box, at the front end of the same, the upper ends of the said arms passing into the longitudinal recesses *d*, formed in the bottom of the box at the side edges. The lower ends of the arms are loosely mounted on a transverse shaft, M, held in hangers N, below the side pieces of the frame B, so that the said arms L can swing in the vertical plane. A track, O, is secured to the inner surface of each side piece of the frame B, which track is partly above and partly below the cross-piece. Beginning at the rear end of the track, which is above the shaft M, the track extends slightly above the side pieces of the frame B, and then toward the front end of the frame, then down below the frame and on about a horizontal line toward the front end of the frame, and is then secured to the bottom of the same, as is shown in Fig. 3. On a transverse shaft, P, are loosely mounted two flanged rollers, Q, which run on the tracks O, and adjoining the inner side of each roller Q a flanged roller, R, is loosely mounted on the shaft P, against which flanged rollers R the arms L rest, so that the rollers R

will always be in front of the arms L, as shown in Figs. 1 and 2. Chains S are secured to the shaft P and to the shaft F. The shaft C is provided with a handle, C′, for turning the same. The box A is provided with a spout, A′, at the rear end, through which spout the coal passes when the box is raised. Either the front end only of the box can be raised, or both the front end and the rear end. If the front end only is to be raised, as shown in Fig. 1, the shaft C is turned, by means of the handle C′, to draw the quadrant-racks E from the cog-wheels G and disengage them from the same, so that if the shaft F is turned by means of the worm and worm-wheel the cog-wheel cannot act on the quadrant-rack. If the shaft F is turned, the chains S will be wound on the same and will draw the shaft P from the front toward the rear end of the wagon-frame, and the rollers R, pressing against the arms L, swing the said arms upward and thereby raise the front end of the box. The shaft P and the rollers R Q form a truck running on the tracks O, and serving to swing the arms L upward. If the box is to be lowered, the shaft F is turned in the inverse direction, whereby the chains S will be unwound, and the weight of the wagon-box will swing the arms L downward and push the trucks P Q R in the direction from the rear toward the front end of the wagon-frame. If both the front and rear ends of the box are to be raised, which is necessary in case the coal is to slide a long distance, the racks E are engaged with the cog-wheels G, so that when the shaft F is turned the racks E will be swung upward at the same time that the arms L are swung upward. When the box A is lowered, the rollers Q rest on those parts of the tracks O below the frame B, and the arms L are at the inner sides of the side pieces of the frame B. No parts of the mechanism project over the sides of the box, thus leaving the same free for signs, &c., and no parts of the mechanism project sufficiently far below the bottom of the frame B to interfere with turning the front wheels.

Having thus fully described our invention, we claim as new, and desire to secure by Letters Patent—

1. In a dumping-wagon, the combination, with the box A, frame B, and arms L, pivoted to the said box and frame, of the transverse shaft P, arranged to move independently of the frames L and to bear against the sides of said arms after ascending the incline of the track, said shaft being connected to operating mechanism, substantially as and for the purpose set forth.

2. In a dumping-wagon, the combination, with the body or box A, the frame B, and arms L, pivoted to said box and to a depending bracket or hanger, N, of the said frame, of the track O, of an approximate **S** shape, with one arm of the **S** arranged below the frame and the other arm above the latter, and the transverse shaft P, having rolls Q R, one set bearing against the sides of the arms and the other set traveling upon the track, said shaft being connected to operating mechanism, substantially as and for the purpose set forth.

3. In a dumping-wagon, the combination, with the body or box A, frame B, arms L, pivoted to said frame and to a shaft, M, supported in brackets N of the box or body, track O, and transverse shaft P, having the rolls Q R, and adapted to move independently of the said arms and to bear against the sides of the arms after ascending the incline of the track, of the toothed quadrants E, shaft G, having the pinions F and H, shaft K, having the worm J, and the chains S, substantially as and for the purpose set forth.

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