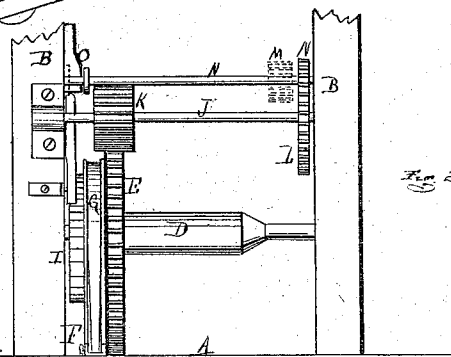
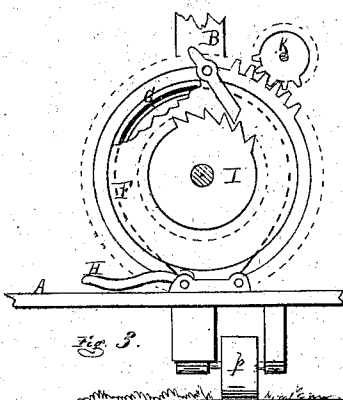
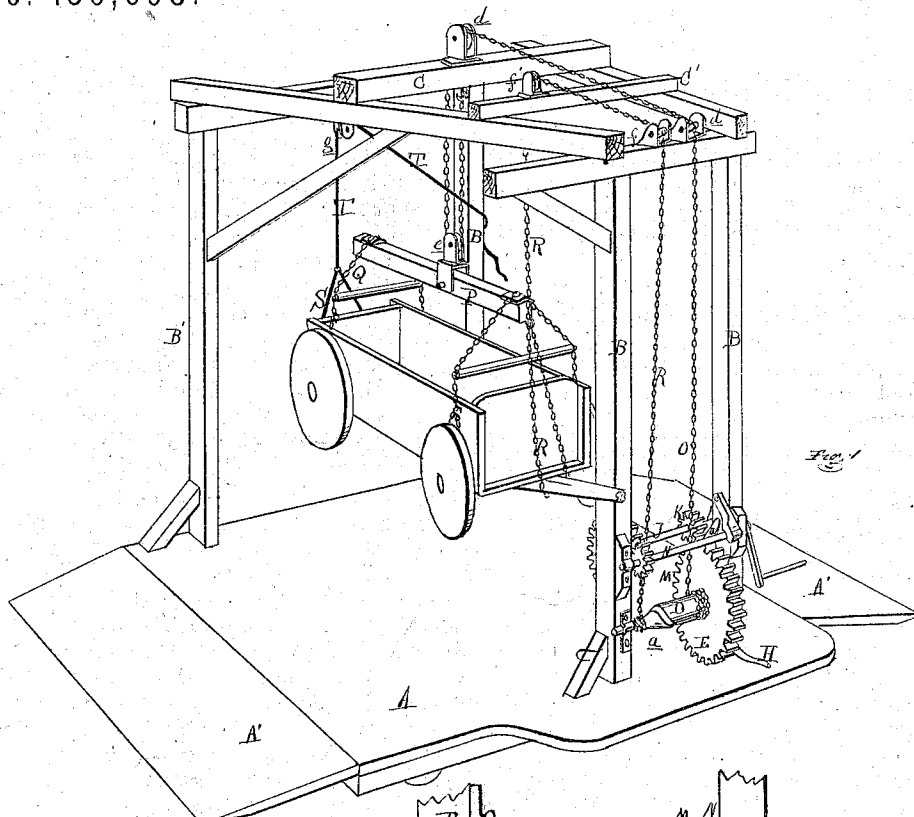


W. J. BROWN.

Apparatus for Hoisting and Dumping Loaded Wagons.

No. 136,698.

Patented March 11, 1873.



ATTEST:
H. J. Sprague
Chas. E. Austin

INVENTOR:
Wm. J. Brown
 By *Atty*
Thos. Sprague

UNITED STATES PATENT OFFICE.

WILLIAM JAMES BROWN, OF MOMENCE, ILLINOIS.

IMPROVEMENT IN APPARATUS FOR HOISTING AND DUMPING LOADED WAGONS.

Specification forming part of Letters Patent No. **136,698**, dated March 11, 1873.

To all whom it may concern:

Be it known that I, WILLIAM JAMES BROWN, of Momence, in the county of Kankakee and State of Illinois, have invented a new and useful Improvement in an Apparatus for Dumping Loaded Wagons; and I do declare that the following is a true and accurate description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon, and being a part of this specification, in which—

Figure 1 is a perspective view of my apparatus with a wagon partially elevated. Fig. 2 is an enlarged elevation of the winch from the inner side, and Fig. 3 is an end elevation of the same.

Like letters refer to like parts in the several figures.

This invention relates to an apparatus to be used at railway grain-receiving depots, warehouses, flouring-mills, &c., for the purpose of unloading grain in bulk from wagons, by raising the wagon bodily above the mouth of the receiving-hopper, and inclining it, so that when the tail-board is raised the grain will flow from the wagon-box into the hopper. The invention consists in the peculiar differential hoisting-winch and the arrangement therewith of a pair of chains—the one for hoisting the wagon and the other for tilting it while it is supported by the first chain; also, in the device for raising the tail-board, and in the general construction and arrangement of the various parts, as more fully hereinafter set forth.

In the drawing, A represents a platform, which is mounted on wheels *t* if the apparatus is to be moved from one receiving-hopper to another. A' is a movable apron at each end of the platform, to enable the wagon to be drawn easily on or off it. B B are two posts erected on the outer side of the platform, and B' B' are two other posts erected on the inner side, which four posts support a frame-work overhead, having the form of a trapezoid, with a central cross-beam, C, overhead, and another, C', crossing it nearer the outer end. D is the shaft of a winch journaled in the posts B, one end of said shaft being of less diameter than the main part, the two diameters running together with a cone, in which is cut a spiral guide-groove, *a*; on the large diameter is keyed a spur-gear, E, and next to it a friction-drum, F, around

which is passed a metallic strap-brake, G, one end of which is connected to the platform, and the other to a t e .dle, H, pivoted thereto, which arrests the motion of the drum and winch when depressed by the foot. I is a ratchet keyed on the shaft outside the drum, and with it engages a pawl, *b*, Fig. 3, pivoted to one of the posts B. J is a counter-shaft journaled in boxes on the inner sides of the posts B, carrying a pinion, K, which meshes with the gear E to rotate the winch-shaft, the counter-shaft having a pinion, L, meshed with a gear, M, on a cranked shaft, N, journaled in boxes on the other sides of the posts. This double gearing enables a man at the crank to exert an immense power at the drum of the winch; the crank-shaft slides in its bearings, so that its spur-wheel may be thrown in or out of gear with the pinion of the counter-shaft, being kept in either position by a dog, *c*, dropped on either side of a collar on said shaft. One end of a chain, O, is secured to the large diameter of the winch shaft. The other end is led over guide-pulleys *d d'* at the top of the frame; thence through a sheave-block, *e*, at the middle of a bar, P; thence up and secured to the cross-beam C. At each end of the bar P is secured the bight of a chain, Q, at its middle, at each end of which chain is a hook. The ends of the chain are passed under the axles of a wagon driven on the platform in the direction of the arrow marked thereon, and hooked into one of its links, the parts of the chain being kept apart by a spreader-bar, Q'. R is a chain, one end of which is secured to the outer end of the smaller diameter, the other end being led over the guide-pulleys *f f'*; and hooked under the tongue of the wagon, where it passes the front end of the bar P one of its links is hooked into a hook thereon. S is a bail, which is hooked under the lower edge or a cleat of the tail-board of the wagon-box; to the bail is secured a cord, T, which is led through a pulley-block, *g*, overhead, by which the tail-board is raised when desired. The receiving-hopper may be supposed to be behind and under the rear end of the wagon-box when in the position shown in Fig. 1.

The grain-receiving warehouses at railway stations, in very many instances, have behind them or at one side two long inclined planes, up which the teams drawing grain for ship-

ment in bulk are driven to discharge the grain into bins in the upper story; if the grain be in bags, the latter are emptied one by one, or if in bulk it is shoveled into the receiving-hopper, in either case requiring a considerable time and expenditure of hand labor. At a warehouse fitted with my apparatus, the wagon loaded with grain in bulk is driven onto the platform A, the chains Q Q are hooked around the axles, and the chain R around the tongue; the person in charge then winds on the crank of the winch, which causes the chain O to wind upon the large diameter of the shaft, hoisting up the wagon bodily, the team having previously been detached therefrom; as the wagon is raised it is also swung around, as shown. The chain R is also wound upon the smaller diameter of the winch-shaft, but is slack until it runs up the spiral groove of the cone onto the larger diameter of the shaft, when the front end of the wagon is drawn up twice as fast as the chain O lifts it, by reason of the latter passing through the tackle-block, while the chain R operates directly upon the end of the wagon and tilts it up; the cord T is now pulled, raising the tail-board of the wagon, allowing the grain to shoot into the receiving-hopper. The pawl

secures the wagon when so raised, and the crank-shaft is pushed in its boxes until its gear M is out of mesh with the pinion L of the counter-shaft; with one foot on the treadle of the brake-strap, the attendant raises the pawl out and away from the ratchet, and controls the lowering of the wagon by the brake-treadle, the empty wagon being swung back to the proper position while lowering.

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

1. The winch shaft D of varying diameters, connected by a cone, for operating successively the lifting and tilting chains O and R, substantially as described and shown.

2. The bail S, cord T, and pulley g, as and for the purpose set forth.

3. The construction and arrangement of the platform A, posts B B', beams G G', guide-pulleys f f' d d', differential winch-shaft D, gears E K L M, counter-shaft J, crank-shaft N, ratchet I, pawl b, chains O R Q, pulley e, and bar P, substantially as and for the purposes set forth.

WM. JAMES BROWN.

Witnesses:

HARRISON WETMORE,

L. B. CLARK.