(No Model.) 3 Sheets—Sheet 1

A. H. WEHRLI & F. J. SANCHEZ.

GRAIN DUMP.

No. 422,102. Patented Feb. 25, 1890.

Fig. 1

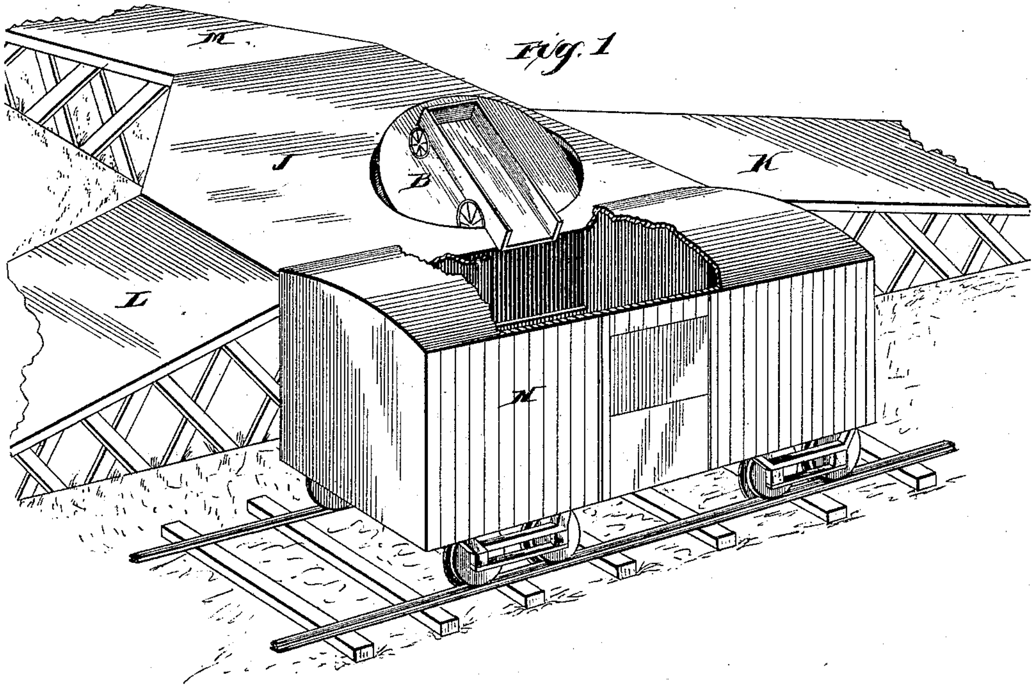


Fig. 2.

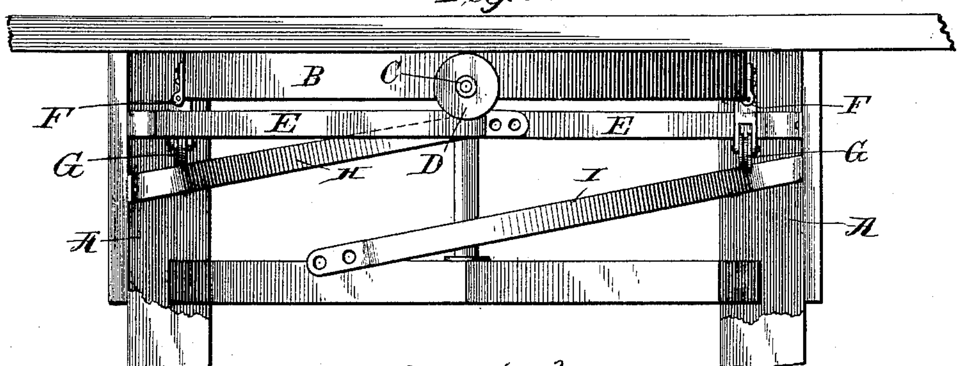
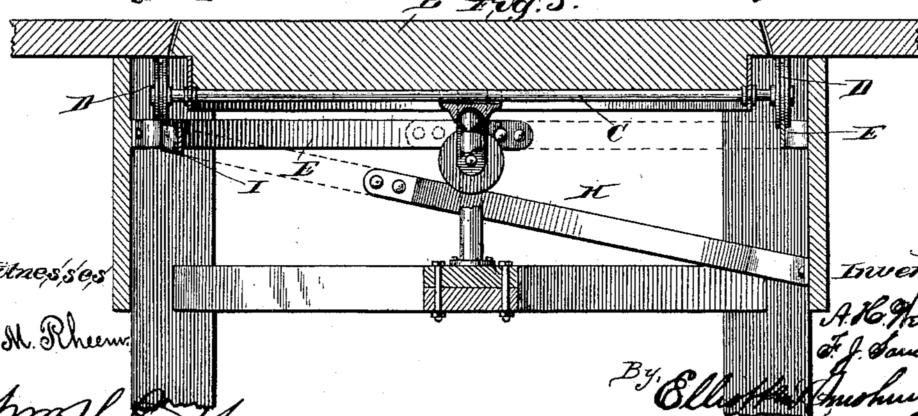


Fig. 3.



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(No Model.) 3 Sheets—Sheet 2.

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Fig. 4.

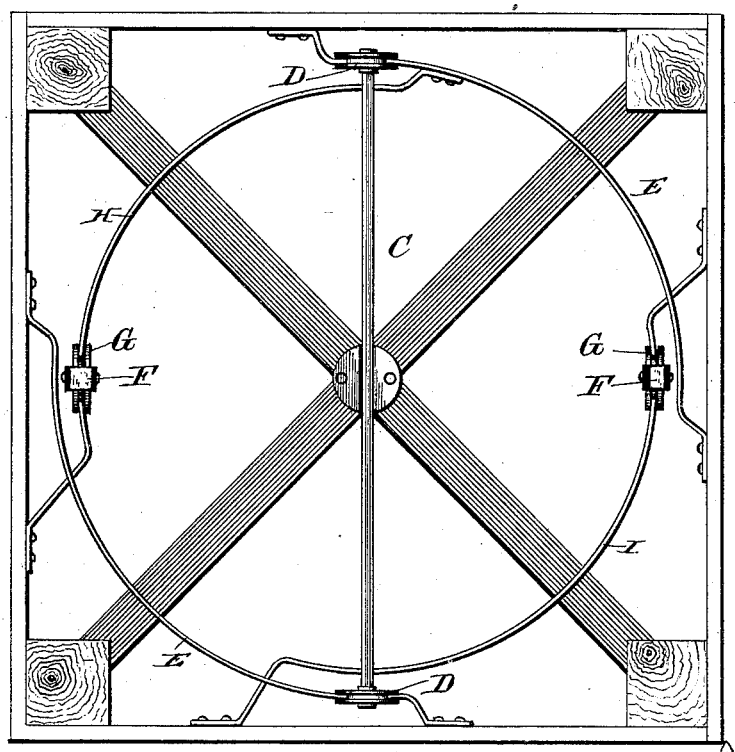
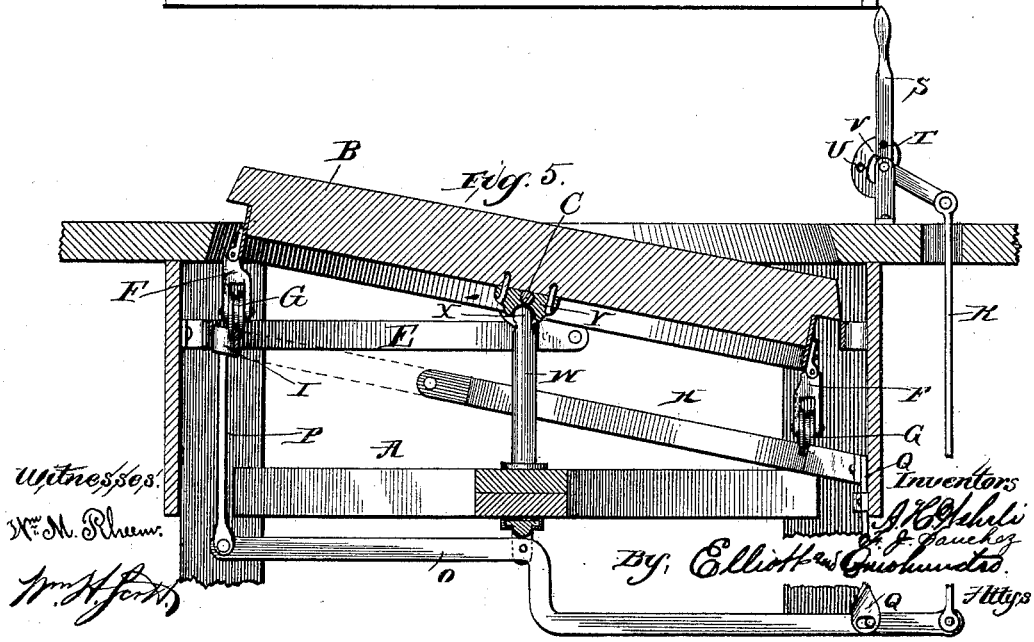


Fig. 5.



(No Model.) 3 Sheets—Sheet 3.

A. H. WEHRLI & F. J. SANCHEZ.

GRAIN DUMP.

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Fig. 6.

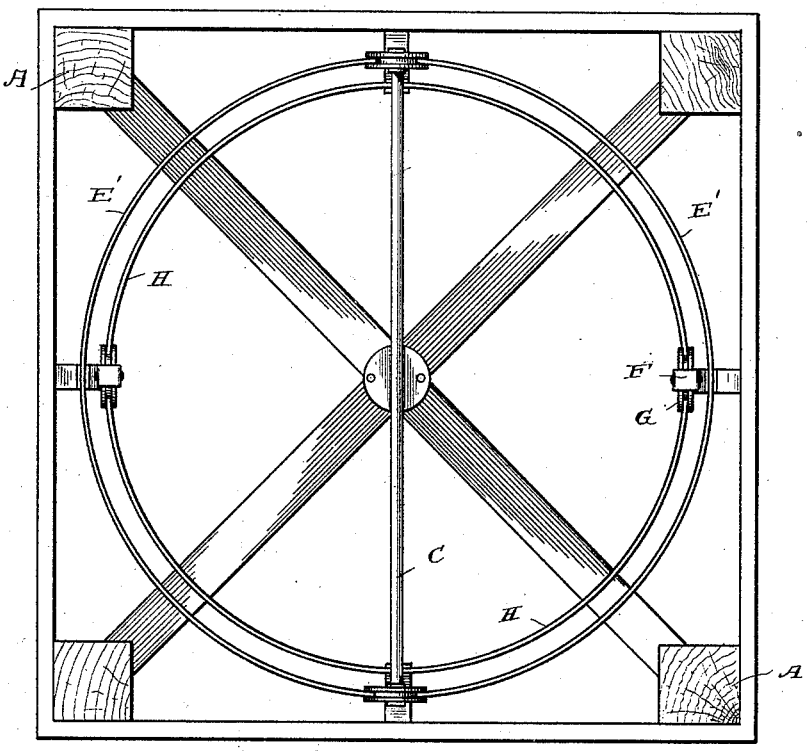
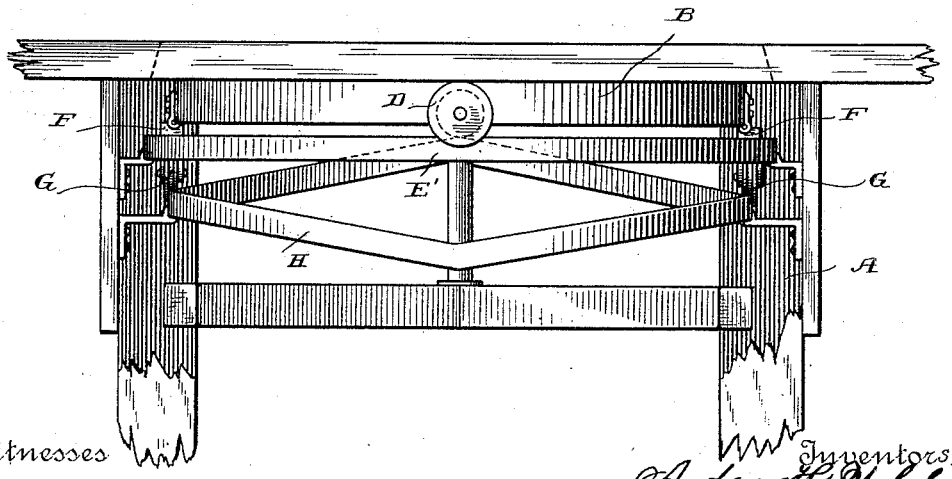


Fig. 7.



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UNITED STATES PATENT OFFICE.

ANDREW H. WEHRLI AND FRANK J. SANCHEZ, OF MONEE, ILLINOIS.

GRAIN-DUMP.

SPECIFICATION forming part of Letters Patent No. 422,102, dated February 25, 1890.

Application filed October 16, 1889. Serial No. 327,211. (No model.)

To all whom it may concern:

Be it known that we, ANDREW H. WEHRLI and FRANK J. SANCHEZ, both citizens of the United States, residing in Monee, county of Will, State of Illinois, have invented certain new and useful Improvements in Grain-Dumps, of which the following is a specification.

This invention relates to improvements in grain-dumps employed in connection with grain-elevators and car-loading and similar apparatus in which the grain is dumped from a wagon into the hopper of a grain-elevator or directly into a car being loaded, and has for its prime object to avoid the necessity for turning the wagon upon an elevated platform, either by teams or by hand, as has heretofore been necessary in order to bring the tail thereof in proper position for dumping, and to reduce the labor necessary for and materially facilitate the operation of dumping or discharging the grain from the wagon.

Another object is to have the dumping-platform horizontally rotatable and vertically adjustable in such manner that it will assume an inclined position automatically and simultaneously with the turning or partial rotation thereof, whereby a wagon or other vehicle upon the platform will be inclined and the contents thereof discharged simultaneously with the turning of the wagon in position for dumping.

A further object is to have the rotatable and automatically-inclining dumping-platform supported in such manner that the platform may be returned to a horizontal position from its inclined position without further rotation in either the same or the reverse direction, whereby the wagon or other vehicle may be drawn off the platform in a line at a right angle from that in which it was drawn on the platform.

These objects are attained by the devices illustrated in the accompanying drawings, in which—

Figure 1 represents a perspective view of a car-dumping platform and runways leading thereto, illustrating the use of our invention; Fig. 2, a side elevation of the dumping-platform, showing the same in its normal horizontal position; Fig. 3, a transverse vertical section thereof at a right angle to Fig. 2; Fig. 4, a plan view thereof with the platform removed, but showing the operating mechanism thereof; Fig. 5, a transverse vertical section taken on a line at right angles to Fig. 3, showing the platform inclined and means for returning it to a horizontal from its inclined position without the necessity for rotating the same; and Figs. 6 and 7, plan and side elevations, respectively, of a modified form of rails for supporting the dumping-platform.

Similar letters of reference indicate the same parts in the several figures of the drawings.

Referring by letter to the accompanying drawings, A indicates the frame for supporting the dumping-platform B, which latter is circular in form and pivotally supported upon a horizontal axle C, underlying the platform across the center thereof, and projecting beyond the same, upon the ends of which axle are loosely mounted a pair of carrying-wheels D, running upon horizontal rails E, rigidly secured to the frame A, and curved on the arc of a circle struck from the axis of the platform, preferably extending a quarter of the circumference thereof at the opposite sides of the platform, so that the platform may make a quarter-turn while supported upon these rails.

Pivotally secured to the edges of the platform, at each side thereof, midway between the ends of the axle, are a pair of depending trucks F, having wheels G journaled therein and running upon a pair of curved inclined rails H I, secured to the frame A, and extending a quarter about but below the platform on the opposite quarters occupied by the horizontal rails, one of which H inclines upwardly, while the other I inclines downwardly from the same horizontal plane, both inclining at the same angle, so that as the platform is turned and supported at its center on the radial lines of the axle one of the trucks will run down the inclined rail and the other up the corresponding inclined rail, causing the platform to tilt or swing upon the axle as a pivot, it being understood that the center of the platform remains at all times in substantially the same horizontal plane, being supported and so held by the horizontal tracks. Thus when in its normal horizontal position all of the four carrying-wheels will be at one

end of their tracks, but that when the platform is given a quarter-turn the wheels will move to the opposite ends of their tracks and the platform will be automatically shifted from a horizontal to an inclined position.

In practice this dumping-platform lies flush with an elevated platform J, to which lead runways K, L, and M, as illustrated in Fig. 1, the runways K and L extending in the same direction, while the runway M extends at a right angle thereto. The wagon or other vehicle is drawn up the runway K onto the dumping-platform by its team facing toward the runway L, after which, if desired, the team may be unhitched and led off of the elevated platform J down the runway L. The tongue of the wagon may then be employed as a lever for giving a quarter-turn to the dumping-platform, which, as before described, assumes an inclined position simultaneously with the turning thereof, so that when the quarter-turn is complete the body of the wagon will be sufficiently inclined to discharge the grain therefrom by gravity when the tail-gate is removed, the grain being either dumped into the hopper of a grain-elevator or directly into a car N upon a track laid along the side of the platform. If desired, however, the team may be employed for turning the wagon and dumping-platform. After the load is dumped the platform may be turned back a quarter, when it again resumes its normal horizontal position, and the wagon may be drawn off the platform and down the runway L. In practice, however, we have found that it is not always practicable or convenient to have the runway L, but that the runway M must be employed instead thereof, and in order to avoid the building of a large elevated platform, and which, too, may be equally impracticable, in order to allow the turning of the wagon upon the platform after being drawn off the dumping-platform, we have illustrated in Fig. 5 means for returning the dumping-platform to its normal horizontal position without having to turn the same backward—that is to say, without having to give it a reverse quarter rotation. Thus after the wagon has been drawn up the runway K and turned upon the turn-table at right angles to said runway, as illustrated in Fig. 1, after the grain is discharged therefrom the wagon will simply be shifted to a horizontal position without turning, and facing the runway M, down which it may then be drawn. To accomplish this end, we employ a lever O, pivoted centrally of its length to a cross-frame beneath the center of the dumping-platform, having vertical extending links P Q, pivotally connected therewith near each end, to the upper ends of which links are pivotally connected and thereby supported the lower end of the inclined rail H and the upper end of the inclined rail I, so that when the lever is swung upon its pivot, after the dumping-platform is tilted to the inclined position shown in Fig. 5, the two rails will be swung to substantially a horizontal position, thereby lowering the elevated side of the platform and raising the depressed side thereof upon the axle as a pivot, thus restoring the platform to a horizontal position without turning the same. Of course, after the wagon is drawn off the dumping-platform, it will be turned back a quarter-turn and the lever operated, so as to restore the parts to their normal position.

The lever O may be operated in any well-known and convenient manner, one form of which is illustrated in Fig. 5, consisting of a connecting-rod R, pivotally secured at one end to the lever O and at its opposite end to a bell-crank lever S, pivoted upon a suitable bracket attached to the main frame A, and provided with a hole T, adapted and arranged to register with corresponding holes U, formed in a segment V, secured to the bracket, so that by means of a lock-pin passed through the holes in the bracket and lever the parts may be locked in their adjusted position. This actuating apparatus, however, may vary materially from the construction shown, for instead of the hand-operating bell-crank lever S a foot-lever or any other means may be employed for operating the lever O, so long as the desired result is accomplished.

In practice we prefer to furnish an additional support for the dumping-platform to relieve the axle thereof of a portion of the weight of the load by means of an upright post W, rigidly secured at its lower end to a stationary portion of the frame A, and with its upper end formed in a ball X, working in a suitable socket provided in a plate Y, secured to the under side of the dumping-platform at the center thereof, constituting a ball-and-socket joint, which, while it supports the center of the platform against vertical movement, at the same time permits the free rotation and tilting of the platform.

With the construction illustrated and described it will be understood that the wagon must always be drawn upon the dumping-platform over either the runway K or L, because the platform always turns in the same direction, and the wagon must face correspondingly, in order that the discharge end thereof may be presented to the hopper, car, or other storing-receptacle; but, if desired to have the dumping-platform so operated that the wagon may be drawn onto it from either direction and dumped by the turning of the platform either way, it is only necessary to have all of the tracks circular, as illustrated in Figs. 6 and 7, with the opposite corresponding quarter of each inclined track inclined in the same direction, but in different planes, with the two intermediate quarters reversely inclined—that is to say, inclined in opposite directions to each other—so as to form a continuous circular track, two quarters of which incline downwardly and two upwardly on

each side of the center or point of conjunction on opposite sides of the circle. This latter arrangement will be found not only preferable, but necessary at certain points where only a single runway can be employed, because of the proximity of warehouses, carsheds, lumber-yards, &c., along the railroad-track permitting the use of a single runway only; but with this last-described construction the wagon may be drawn on the dumping-platform from either direction in which it is convenient to extend the runway, given a quarter-turn, so as to dump its load, and then given another quarter-turn in the same direction, thus restoring the platform to a level, with the wagon now facing the runway up which it was drawn to the platform.

From the foregoing description it will be understood that we are enabled to employ our invention in three different forms, to wit: in the form shown in Figs. 2, 3, and 4, in which the inclined rails are stationary and the runways K and L are required, or in the form shown in Fig. 5, in which the inclined tracks are vertically movable at one end and the runways K or L and M are required, or in the form shown in Figs. 6 and 7, in which the inclined track or rail is continuous and only one runway, either K or L, is required. Thus we are enabled to adapt our invention to almost any conditions or circumstances which may arise, but in all cases embracing the broad feature of our invention—that is, the dumping or inclining of the platform simultaneously with the rotation thereof.

Having described our invention, what we claim, and desire to secure by Letters Patent, is—

1. In a grain-dump, the combination, with a horizontally-rotatable dumping-platform, of horizontal and inclined ends supporting the same, for causing said platform to assume an inclined position simultaneously with the rotation thereof, substantially as described.

2. In a grain-dump, the combination, with the dumping-platform, of horizontal rails supporting said platform at opposite sides of the center, and inclined rails supporting said platform midway between the supports thereof upon the horizontal rails, whereby the platform will assume an inclined position simultaneously with the rotation thereof in a horizontal plane, substantially as described.

3. In a grain-dump, the combination, with a circular dumping-platform and wheels supporting the same at the four quarters thereof, of horizontal rails upon which the pair of wheels at opposite sides of the platform travel, and inclined rails upon which the intermediate wheels travel, substantially as described.

4. In a grain-dump, the combination, with a circular dumping-platform and wheels supporting the same at the four quarters thereof, of a pair of horizontal rails extending parallel with and one quarter about said platform at opposite sides thereof, upon which two of the wheels run, and a pair of inclined rails extending about the opposite quarters of said platform upon which the remaining two wheels run, substantially as described.

5. In a grain-dump, the combination, with the dumping-platform, a vertical post underlying the center thereof, and a ball-and-socket joint between said post and platform, of wheels supporting the four quarters of said platform, horizontal rails upon which two opposite wheels run, and inclined rails upon which the intermediate wheels run, substantially as described.

6. In a grain-dump, the combination, with the dumping-platform and wheels supporting the four quarters thereof, of horizontal rails upon which two opposite wheels run, inclined rails upon which the intermediate wheels run, and means for leveling the inclined rails, substantially as described.

7. In a grain-dump, the combination, with the dumping-platform and wheels supporting the four quarters thereof, of horizontal rails upon which two opposite wheels run, inclined rails upon which the two intermediate wheels run, a lever supporting upon its ends, respectively, one end of each of the inclined rails, and means for operating said lever whereby the inclined rails may be leveled, substantially as described.

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