

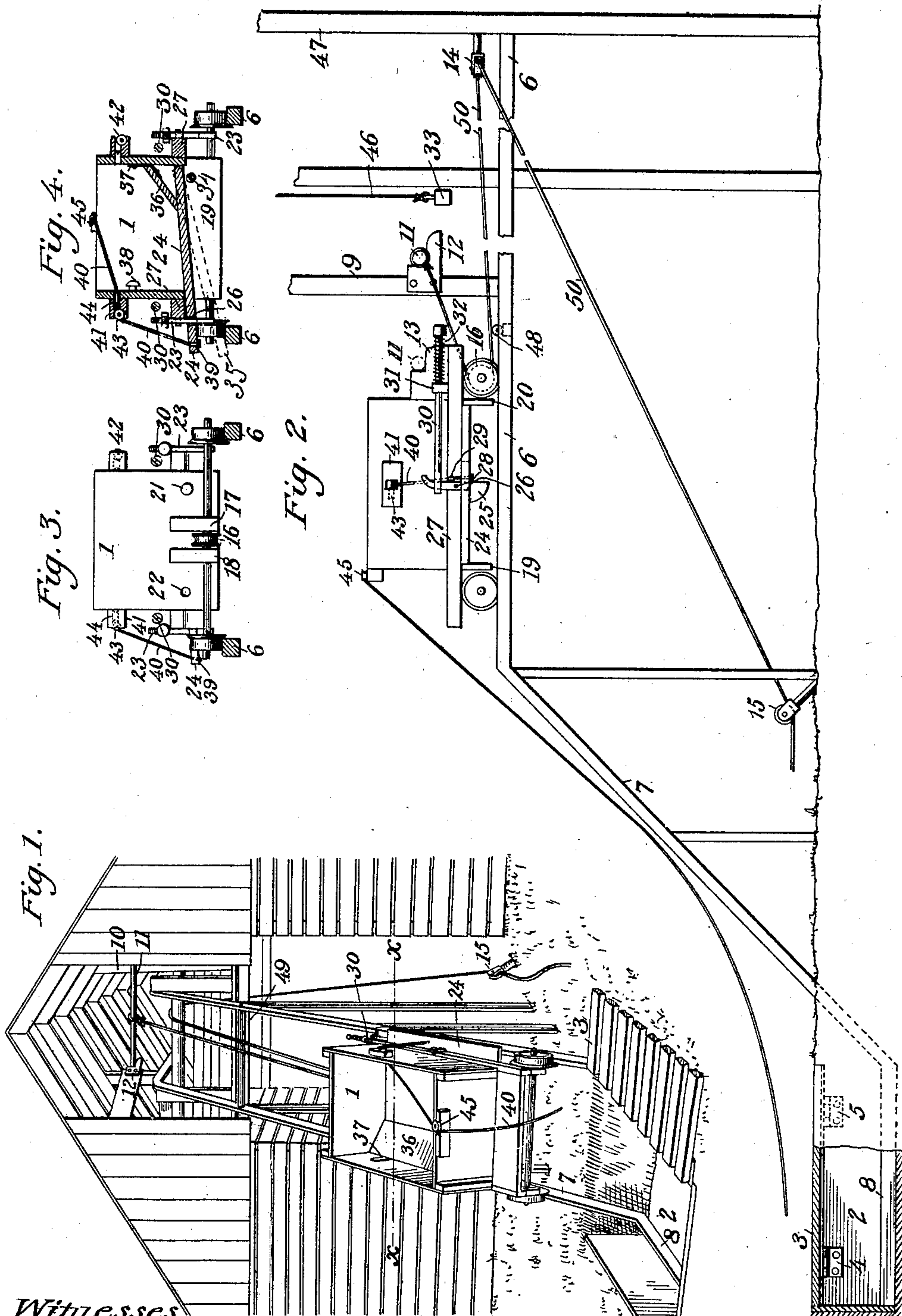
No. 679,737.

Patented Aug. 6, 1901.

W. GALBREATH.
MACHINE FOR HANDLING GRAIN.

(Application filed Mar. 16, 1901.)

(No Model.)



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UNITED STATES PATENT OFFICE.

WILLIAM GALBREATH, OF YATES TOWNSHIP, ILLINOIS.

MACHINE FOR HANDLING GRAIN.

SPECIFICATION forming part of Letters Patent No. 679,737, dated August 6, 1901.

Application filed March 16, 1901. Serial No. 51,481. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM GALBREATH, a citizen of the United States, residing in Yates township, in the county of McLean and State of Illinois, have invented a new and useful Machine for Handling Grain, of which the following is a specification.

My invention relates to improvements in machines for transferring grain from a loaded wagon to a crib or bin.

The objects of my invention are, first, to provide a car adapted to receive grain from a loaded wagon and means for moving such car to a position near the top of a crib or bin by animal-power; second, to provide means whereby the power used for moving such car may act differentially to permit more rapid movement of the car in a horizontal plane than when moving it from a lower to a higher plane; third, to provide means for automatically dumping the contents of the car into the crib, and, fourth, to provide means for returning said car to an initial position. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a vertical elevation of a portion of my improvement as applied to a building for storing ear-corn in which two parallel cribs are separated by a driveway. Fig. 2 is a side elevation of the entire machine separate from the cribs; Fig. 3, an end elevation of the car; and Fig. 4, a vertical section of the car on the line X X, Fig. 1.

Similar numerals of reference refer to similar parts throughout the several views.

A track upon which car 1 is adapted to move has an elevated horizontal section 6 6, a lower horizontal section 8, and an inclined section 7. The lower section 8 may be sunken below the surface of the ground in a pit 2, as shown in Figs. 1 and 2. When thus constructed, a cover 3 is provided to allow a wagon to be drawn over the pit. Cover 3 is hinged at 4 and 5, as shown in Fig. 2.

The car 1 is supported on flanged wheels by axles at each end of the car, the axles being rigidly fixed to the sills of the car 27 27 by screw-threaded bolts 23 23. (See Figs. 3 and 4.) A grooved pulley 16 (seen in full lines in Fig. 3 and in dotted lines in Fig. 2) turns upon its female center on the axle at

forward end of the car. Two blocks 17 and 18, one upon each side of pulley 16, are rigidly attached to the end of the car.

A horizontal bar 11 is supported on brackets 12 and 12, fixed upon vertical posts at the side of track 6. In Fig. 2 one of the posts is shown at 9 with a bracket 12 attached, and in Fig. 1 a post is shown at 10 and a bracket at 12. The sides of the car project at the forward end and are notched to form brackets adapted to receive and support bar 11 when the car passes the brackets 12 and 12. In Fig. 2 the position of bar 11 is indicated in dotted lines resting upon one of the projecting and notched sides of the car, forming a bracket, as shown at 13, Fig. 2. The rope 50, Fig. 2, has one end fast to the middle of bar 11, from which it passes around pulley 16, thence in a direction parallel with track 6, to and around deflecting-pulley 14, supported by upright 47, which is a part of the frame of the crib, and then to the deflecting-pulley 15, near the ground, its free end being adapted to be attached to a whiffletree for applying animal-power. The rope 50 is kept in normal position upon pulley 16 by the two blocks 17 and 18, fixed upon the end of the car and near the sides of pulley 16.

To permit the car to be dumped automatically, the bottom of the car 24 is removable.

Holes in the ends of the car are adapted to receive an iron rod, which being inserted at one end of the car and extending to the other end and through the registering hole at the opposite end of the car provides a support for one side of the bottom of the car. In Fig. 3 the holes in the forward end of the car are shown at 21 and 22. In Fig. 4, 34 indicates in cross-section the iron rod supporting one side of the bottom of the car 24. The holes in rear end of the car being identical in position with those described, it is considered unnecessary to show them in the drawings.

As shown in the cross-section, Fig. 4, the bottom of the car is slightly inclined and extends below one side of the car and also beyond the side of the car, and its projecting side is supported upon the shoulder of a retaining-latch 25, Fig. 2. The latch 25 is pivoted at 28 to the sill of the car 27 and extending above the sill passes through an orifice near the end of a spring-actuated dump-

ing-rod 30. The lower end of latch 25 is curved and adapted to pass through a slot 26 in the projecting bottom of the car 24 and engages the bottom at the rear end of the slot 26. A perforated block 31 is fixed upon sill 27. The dumping-rod 30 passes loosely through block 31 and also through a helical spring 32, which abuts against the block 31 and bears upon the enlarged forward end of the rod 30 and forces it forward, thus causing the upper end of latch 25 to move forward, while the lower end of the latch is pressed backward to engage the rear end of slot 26, and thus support one side of the bottom of the car.

In Fig. 2, 33 is a dumping-bar suspended by ropes from the top of the building across the track 6 at a level with dumping-rod 30. One of the ropes supporting the bar is shown at 46, Fig. 2. The bar 33 may be moved to any position along the track 6, and its horizontal movement is limited by making its ends project beyond the sides of track 6 sufficiently to engage the upright timbers of the building which form the driveway. The function of bar 33 is to engage the end of dumping-rod 30 and cause it to move backward in antagonism to spring 32, which causes the latch 25 to release the bottom of the car. The bottom of the car then falls at one side to the track 6, as shown in dotted lines at 35, Fig. 4. The ends of the car extend below the bottom, as shown at 19 and 20, Fig. 2, and at 19, Fig. 4, to keep the corn in place while moving down the bottom of the car. The movement of latch 25 is limited by a stop-pin 29 inserted in sill 27.

A rope 40, Figs. 1, 3, and 4, has one end knotted and passed through a hole in the projecting bottom of the car, as shown at 39, Figs. 3 and 4, and then through pulley-block 41, over pulley 43 in vertical plane, then around pulley 44 in horizontal plane, thence through pulley-block 45 at the rear end of the car, and has its free end on the ground. This construction permits an operator on the ground to close the bottom of the car after its contents are dumped, as described, by pulling upon rope 40, which will lift the depressed bottom of the car to its former position. The curved lower end of latch 25 permits the rear end of slot 26 to push the latch to one side until the relative position of the parts permits the shoulder of the latch to engage the rear end of the slot. The car may then be pulled by rope 40 backward along the track to any desired position.

In Figs. 1 and 4, 36 is a guard-board to prevent the contents of the car passing between the bottom and the side of the car. It is removably hinged to one side of the car by forming each hinge of flexible material, as a leather strap slotted near one end to receive the projecting head of a bolt inserted in the side of the car.

In Fig. 4, 37 is one of the bolts adapted to support a slotted leather strap attached to

guard-board 36; but the position and form of one of the bolts is more plainly shown at 38, Fig. 4.

Friction-rollers adapted to support rope 50 are placed upon the track 6, as may be necessary. One such roller is shown in Fig. 2 at 48 and a similar roller at 49 in Fig. 1.

To permit the contents of the car to be dumped upon either side, a pulley-block 42, similar in construction to pulley-block 41, enclosing two pulleys similar in construction to pulleys 43 and 44, is attached to the side of the car, as shown in Figs. 3 and 4. Also a pivoted latch controlled by a spring-actuated dumping-rod analogous to latch 25 and dumping-rod 30 are attached to the side of the car below the block 42.

To reverse the action of the dumping apparatus, the end of rope 40 is detached from the bottom of the car at 39 and withdrawn from pulley-block 41 and passed through pulley-block 42. The iron rod 34 is removed and the bottom is taken from the car and turned to bring the side with slot 26 to the opposite side of the car. Supporting-rod 34 is then inserted in hole 22 and passed beneath the bottom of the car into the registering hole in the rear end of the car. The rope 40 is then attached, as described, to the bottom of the car. Also guard-board 36 is removed and its slotted flexible hinges fixed upon bolts projecting from the opposite side of the car. In Fig. 4, 38 shows the position and form of one of the bolts adapted to receive the slotted hinge.

The method of using my device is as follows: The cover 3 of pit 2 being closed, a loaded wagon is driven over the pit and placed with its rear end adjacent to the pit. Car 1 is then moved along its track into the pit. The contents of the wagon having been transferred to the car, power is attached to the free end of rope 50 and the car is drawn from the pit up the inclined section 7 of the track, and then along the horizontal section of track 6 until the notched ends of the car 13 meet the bar 11. The bar 11 then occupies the position shown in dotted lines at 11, Fig. 1, and is removed from brackets 12 12 and is carried forward by the car. When the projecting end of dumping-rod 30 comes in contact with dumping-bar 33, the rod is forced backward, and acting on the latch 25 the bottom of the car is released at one side and falls to the position shown in dotted lines at 35, Fig. 4. The contents of the car then fall to one side of the track into the crib. Inclined boards may be attached to the side of the crib, if necessary, to conduct the corn into the crib. When thus emptied, an operator upon the ground may by pulling upon rope 40 lift the lower side of the bottom of the car to its former position. The rear end of slot 26 acting upon the lower curved end of latch 25 moves the latch to one side until the shoulder of the latch is in position to support the bottom, when the spring-actuated rod 30 forces

it to its former position. By pulling upon rope 40 after the bottom of the car is closed the car may be drawn backward to any desired position upon either the inclined or horizontal sections of track. When passing backward the bar 11 will be received upon and transferred to the brackets 12 12, as shown in Figs. 1 and 2.

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

1. The combination of a track consisting in part of an inclined section, a car adapted to move upon such track, a pulley 16 upon the end of the car, brackets 13 upon the end of the car, brackets 12 fixed upon each side of the track, a horizontal bar 11 adapted to rest upon the brackets 12 or brackets 13, a rope attached to said bar 11 with deflecting-pulleys 14 and 15 substantially as described and for the purposes specified.

2. A car adapted to contain grain and to be drawn upon a track, the bottom of said car supported at one side by a removable rod 34, and at the other upon the shoulder of a pivoted latch 25, a spring-actuated dumping-rod 30, in combination with a dumping-bar 33, substantially as described and for the purposes specified.

3. In a car adapted to move upon a track,

a removable bottom as described in combination with a removable rod 34 adapted to insert in holes in the end of the car, a pivoted latch 25, dumping-rod 30 and spring 32, a dumping-bar 33 all in combination with pulley-blocks 41 and 42 and a rope 40 attached to one side of the removable bottom of the car, substantially as described and for the purposes specified.

4. In combination with a track having an inclined section connecting horizontal sections in different vertical planes and a car adapted to receive grain from a loaded wagon, a removable bottom for said car, a removable supporting-rod 34, a pivoted latch 25, a dumping-rod 30 with a helical spring 32, a suspended dumping-bar 33, pulley-blocks 41 and 42, pulley-block 45 and rope 40 all substantially as described and in combination with brackets 13 upon said car, and brackets 12 and 12 fixed at the sides of the track, a pulley 16 upon the end of said car a bar 11 with the rope 50 and deflecting-pulleys 14 and 15 substantially as described and for the purposes specified.

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