

(No Model.)

3 Sheets—Sheet 1.

A. PETERSON.  
ELEVATOR AND DUMP.

No. 471,137.

Patented Mar. 22, 1892.

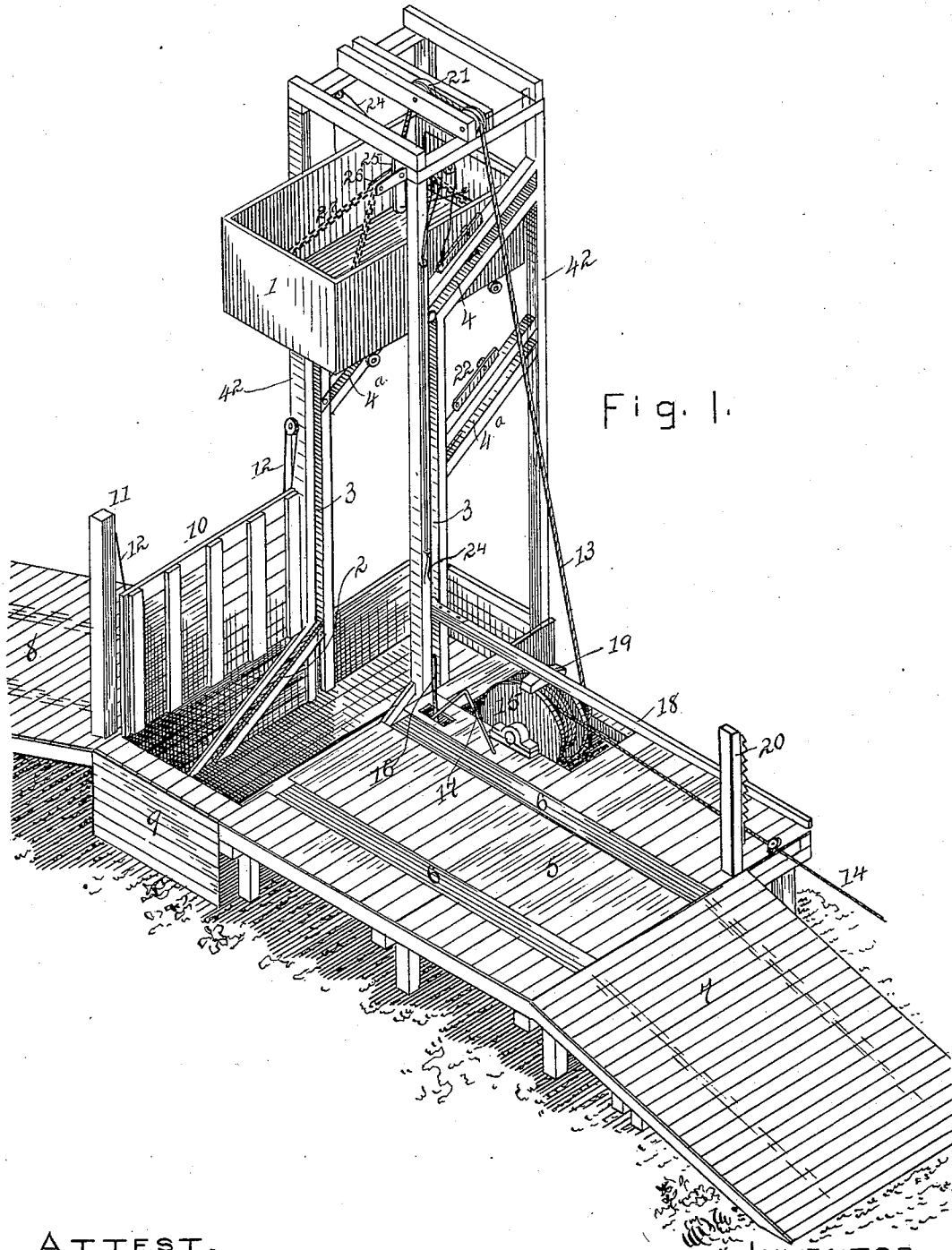


Fig. 1.

ATTEST.

L. P. Graham

William Graham

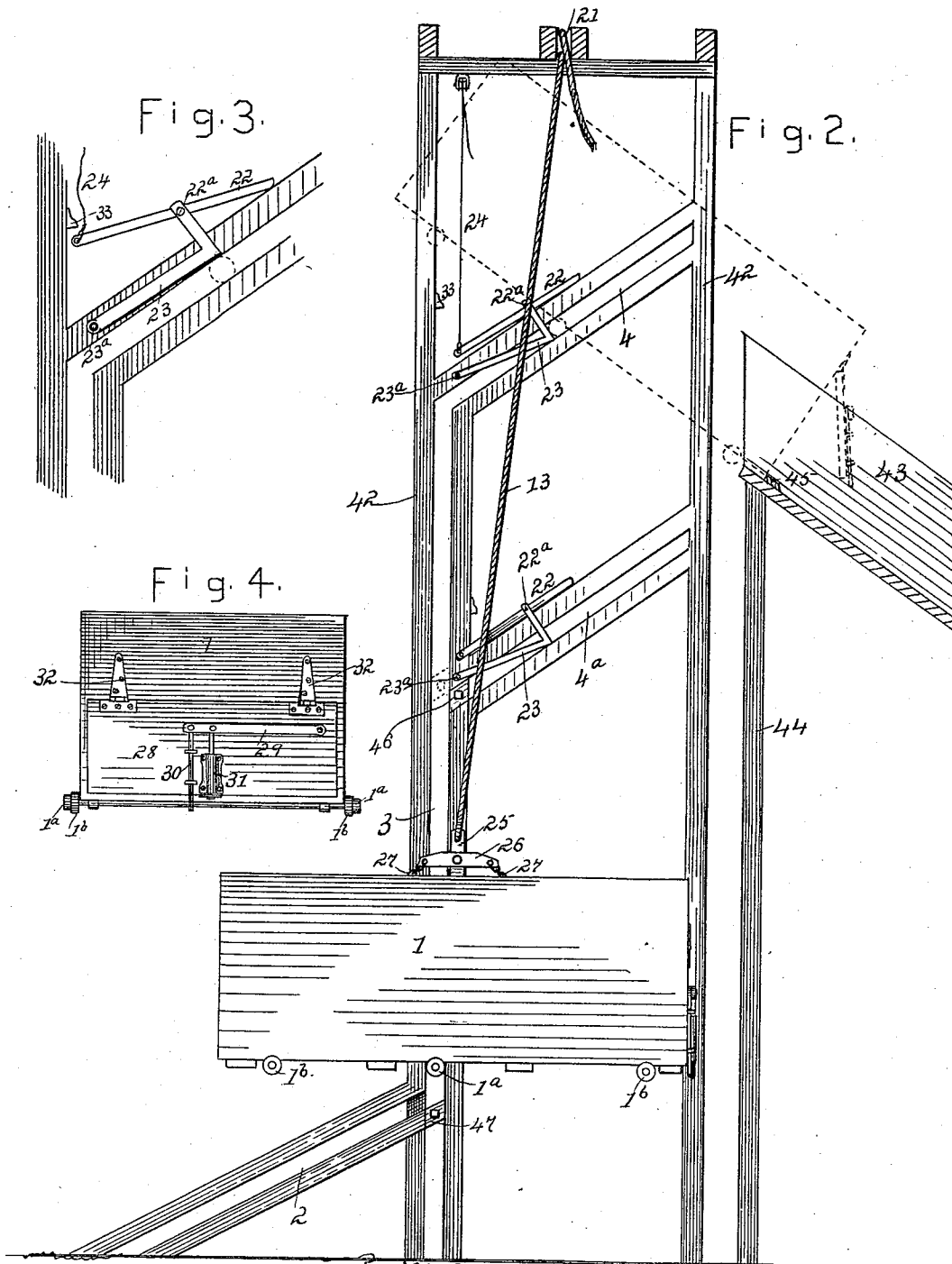
INVENTOR

Alfred Peterson

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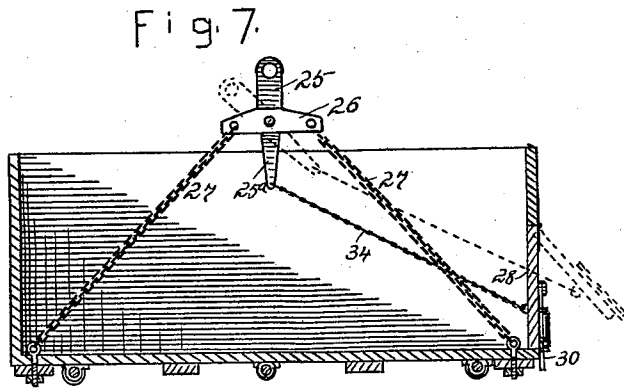
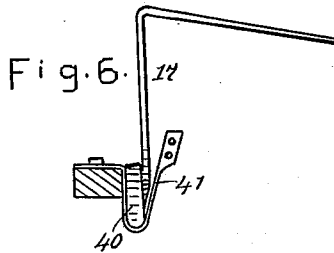
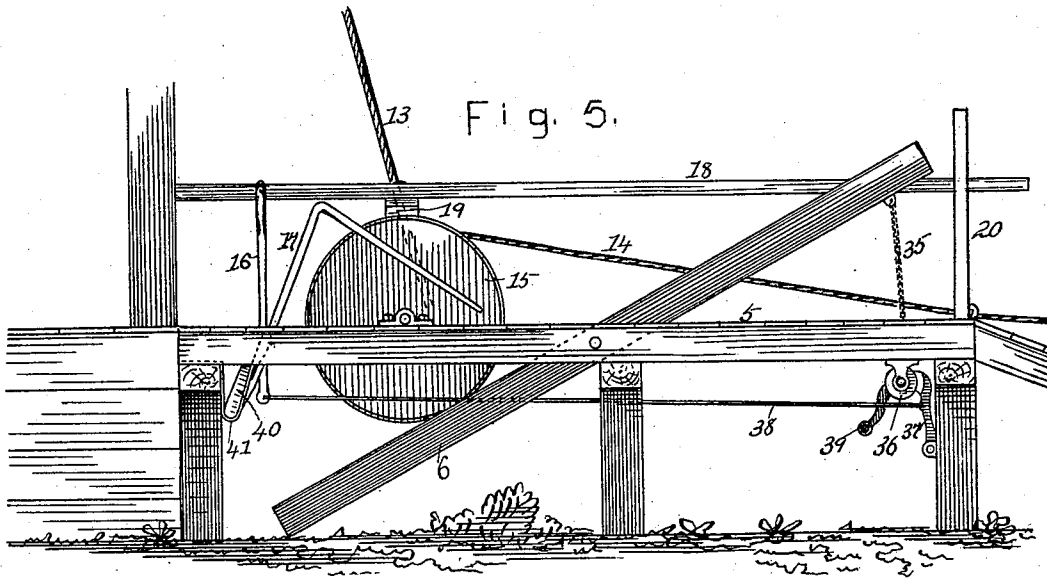
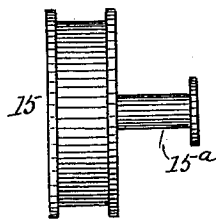


Fig. 8.



ATTEST.

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William Graham.

INVENTOR

Alfred Peterson

# UNITED STATES PATENT OFFICE.

ALFRED PETERSON, OF HINESBOROUGH, ILLINOIS.

## ELEVATOR AND DUMP.

SPECIFICATION forming part of Letters Patent No. 471,137, dated March 22, 1892.

Application filed June 4, 1891. Serial No. 395,028. (No model.)

*To all whom it may concern:*

Be it known that I, ALFRED PETERSON, of Hinesborough, in the county of Douglas and State of Illinois, have invented certain new and useful Improvements in Elevators and Dumps, of which the following is a specification.

This invention is designed to receive the contents of a wagon, elevate the same, and dump it automatically; and it consists in the details of construction and combinations of parts hereinafter set forth and claimed.

In the drawings accompanying and forming a part of this specification, Figure 1 is a perspective representation of my device. Fig. 2 is a vertical section through the elevator-frame, showing the receiving-box and indicating its mode of operation. Fig. 3 is a representation in detail of a latch used to sustain the receiving-box while it is discharging its contents. Fig. 4 is an elevation of the discharge end of the receiving-box, showing the mechanism used to open the door of the box automatically. Fig. 5 is a side view of the platform having dump-sills to dump the contents of a wagon-bed into the receiving-box. Fig. 6 shows in detail the rocking cross-bar which normally sustains the ends of the dump-sills and which may be rocked, as indicated in such figure, to permit the sills to dump. Fig. 7 is a section longitudinally through the receiving-box, showing the manner of sustaining the same and of holding the door normally closed. Fig. 8 is a detached view of the drum used to elevate the box and its load.

The elevator-frame 42, which may be constructed in any desired manner and is to be suitably braced, has the lower oblique guides 2, the vertical guides 3, and the upper oblique guides 4 and 4<sup>a</sup>. The box 1 has rollers 1<sup>a</sup> somewhat to the rear of its longitudinal center, and such rollers are adapted to the grooves in the guides of the elevator-frame. A pulley 21 at the top of the elevator-frame provides a bearing for the rope 13, which connects with the receiving-box, extends over the pulley, and connects at its opposite end with the small end 15<sup>a</sup> of drum 15. Rope 14 connects with the large part of the drum and is adapted to connect with the doubletree of the team

used to elevate the box. Lever 18 has the brake-shoe 19 adapted to the periphery of the drum, and rack-post 20 provides means for holding the shoe more or less closely in contact with the drum. The elevator-frame has a pit 9 at one side of its lower end, and in this pit extend the oblique guides 2. Door 10 (shown in a vertical position in Fig. 1) is adapted to close the top of the pit and provide a platform over which a wagon may pass. Cords 12 connect with the door, extend over pulleys on frame 42 and post 11, respectively, and carry counter-weights at their opposite ends. The platform 5 has the dump-sills 6, and it is approached by incline 7. Incline 8 provides an approach to the door 10, and when such door is in a horizontal position there is a continuous wagon-way up one incline, across the door and the platform and down, the other incline. The box 1 has chains 27 extending obliquely upward from each lower corner and connecting with the ends of the cross-head 26, as seen in Fig. 7. Lift-bar 25 is connected pivotally with the cross-head at the center thereof and it extends below the same, as seen at 25<sup>a</sup>. Chain 34 connects the lower end of the lift-bar with door 28 of box 1 and holds the same closed, while the lift-bar sustains the relation to the cross-head shown by solid lines in Fig. 7. When the relation of the lift-bar to the cross-head is as indicated by dotted lines in Fig. 7, the relaxation of the chain 34 permits the door to swing open, as indicated. The door is held normally closed by a spring-bolt 31, which connects at its upper end with lever 29. Bolt 30 also connects with lever 29, and it extends downward below the bottom of the box in a manner to strike an obstacle when the box is dumped, and by raising the lever to draw the bolt and open the box-door, which is hinged at 32, as shown. The oblique guides 4 and 4<sup>a</sup> have each a latch 23, pivoted at 23<sup>a</sup> and extended above the guide-bar at its swinging end. A lift-lever 22 lies normally along the upper surface of the guide-bar, is connected pivotally at 22<sup>a</sup> with the swinging end of the latch, and has a cord 24, which extends over a pulley in the upper part of the frame and

terminates at some readily-accessible point, as indicated in Fig. 1. The upward swing of lift-levers is limited by stop-blocks 33, suitably secured to the elevator-frame. The dump-sills 6 are usually held in a horizontal plane by means of the rocking cross-bar 40, such cross-bar in the meantime occupying the position shown in Fig. 5. By raising lever 17 the cross-bar is rocked to the position shown in Fig. 6 and the sills are permitted to dump. The straps 41, which sustain the cross-bar, are constructed substantially as shown in Fig. 6, in order to permit the rocking motion, and they are secured to a permanent sill and to a sleeper or joist of the platform, as indicated. Chains 35 are connected with the rising ends of the dump-sills and with drums 36, secured under the platform. Brake-shoes 37 bear against the peripheries of the drums and connect by means of rods 38 with lever 16. Crank 39 provides means for winding the drums after a dump has been effected and the sills returned to a horizontal position.

In operation the receiving-box is lowered and guided by inclines 2 into box or pit 9, where it rests on wheels 13. The door 10 is closed. The loaded wagon is driven up incline 8 over door 10 and onto dump-sills 6. The door 10 is opened, as seen in Fig. 1. Lever 17 is raised to the position shown in Fig. 6, thus permitting the rear ends of the dump-sills to descend with the wagon, and pressure is put on drums 36 through lever 16, in order to avoid a detrimental jar, which might occur if the wagon should dump too rapidly. The rope 14 is connected with the wagon in some simple manner permitting ready detachment, and when the contents of the wagon are deposited in box 1 the wagon is driven down incline 7 and forward in a line therewith until the box is elevated or until the team has traveled a distance equal to about six times the height that the box travels, the proportion of the large cylinder of the drum being to the small cylinder as six to one and the team having a corresponding power. The box follows guides 2 until it reaches vertical guides 3, which it follows to oblique guides 4 or 4<sup>a</sup>, according as it is desired to elevate the box to a greater or less height. Passing along one of the upper oblique guides, the guide-rollers of the box come in contact with and raise the inclined latches 23, which fall behind and block backward motion of the rollers. The team is now stopped and the rope slackened until the weight rests altogether on the guide-rollers, when the forward and heavier end of the box will descend, as indicated by dotted lines in Fig. 2, thus permitting the trip-bolt of the door to strike block 45 in chute 43 and raise the securing-bolt 31. While the box is in the oblique position necessary to dump its contents the lift-bar 25 occupies the position with relation to the cross-head shown by dotted lines in Fig. 7 and the door 28 is permitted to remain open;

but as soon as the box is righted by tension on the rope preparatory to lowering the chain 34 draws the door closed and subject to the positive action of the lock-bolt. Prior to lowering the box the rope 14 is detached from the wagon or team, as the case may be, and pressure is applied to the drum through brake-lever 18. The latches 23 are then raised by means of cords 24, acting on lift-levers 22, and the box, restrained by friction, is permitted to descend.

Blocks 46 and 47 (seen in Fig. 2) are removable, and 46 is adapted to be transferred to the adjacent position in the vertical guide-slot indicated by dotted lines, thus opening oblique guide-slot 4<sup>a</sup>, closing the vertical guide above such slot, and forcing the box to travel along guide 4<sup>a</sup> instead of 4, as shown. By removing block 47 the box may descend vertically without moving laterally into the pit 9, thus meeting an occasional emergency in that direction.

The device is of utility in loading cars with grain and in filling cribs or bins. The frame of the elevator may be constructed in duplicate, when desired, and the same box, platform, &c., be used to either load a car or fill a bin, as occasion may demand.

I claim as new and desire to secure by Letters Patent—

1. In an elevator and dump, the combination of a pit, a receiving-box adapted to descend into the pit, a door to cover the pit, a dump-platform at a side of the pit, an elevator-frame at an end of the pit, and guideways in the elevator-frame for the receiving-box, such guideways extending obliquely into the pit, as set forth.

2. In an elevator and dump, the combination of an elevator-frame having guideways extending obliquely across its upper portion, a box having guide-rollers adapted to travel in said ways of the elevator-frame, a rope and pulley to raise the box, and latches on the oblique ways, adapted to be raised by the upward travel of the rollers and to fall behind such rollers, as set forth.

3. In an elevator and dump, the combination of the box having the guide-rollers, the oblique guideways of the elevator-frame, the latches pivotally connected with the guideways and adapted to be raised by the rollers of the box, the levers resting normally on the guideway-bars and connecting pivotally with the latches, and the cords to raise the levers and the latches, as set forth.

4. In an elevator and dump, the combination of the box having guide-rollers to one side of its transverse central line, the cross-head having chains extending to the four corners of the box, the lift-bar pivoted in the cross-head and extending below the same, the swinging discharge-door for the box, and the chain extending from the lower end of the lift-bar to the door, as set forth.

5. In an elevator and dump, the combina-

tion of a dump-box having a swinging door  
in the end opening upwardly from the bot-  
tom, a lock-bolt on the door, a lever on the  
door connected pivotally with the lock-bolt,  
5 and a trip-bolt connected with the lever and  
extended beyond the bottom of the box, as  
set forth.

In testimony whereof I sign my name in the  
presence of two subscribing witnesses.

ALFRED PETERSON.

Attest:

H. PASCO,  
JOHN W. REDMAN.