

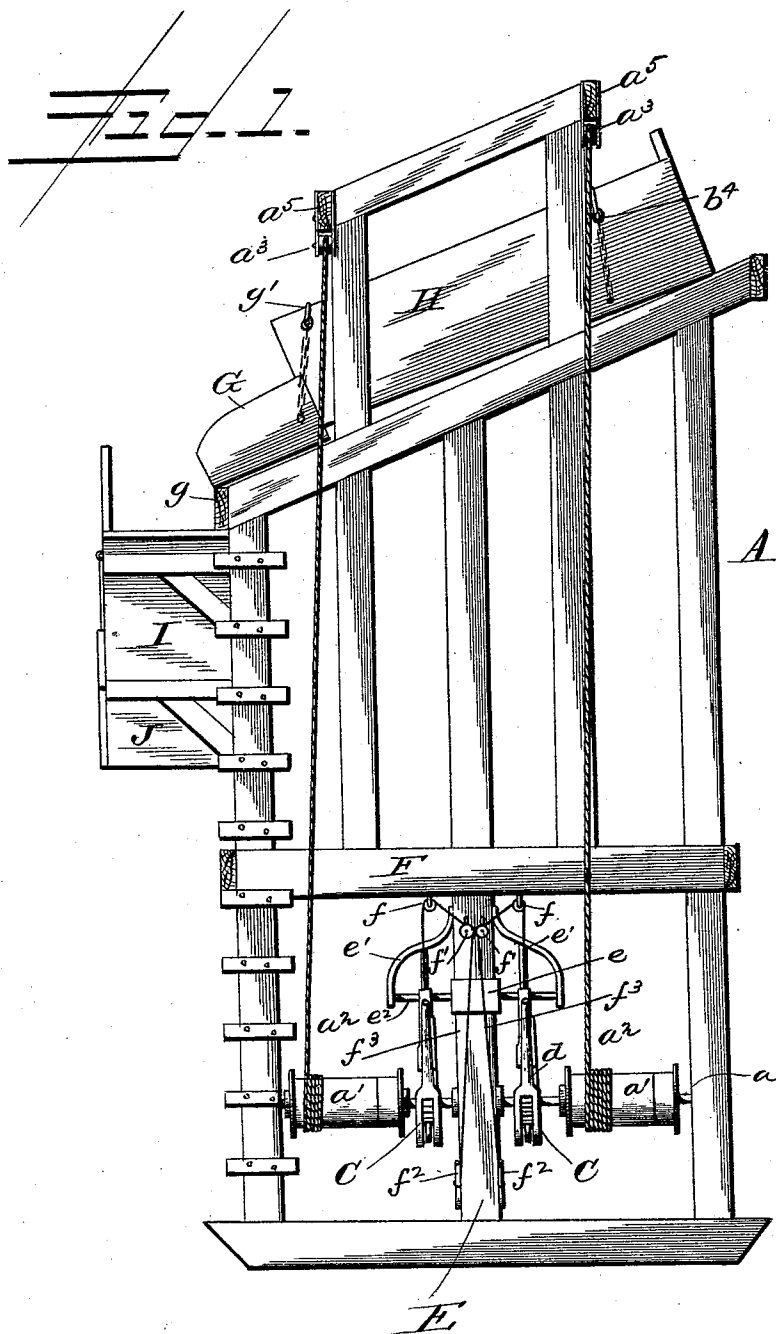
(No Model.)

3 Sheets—Sheet 1.

P. D. HARPER.
ELEVATOR.

No. 478,999.

Patented July 19, 1892.



WITNESSES
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W. E. Landale.

INVENTOR
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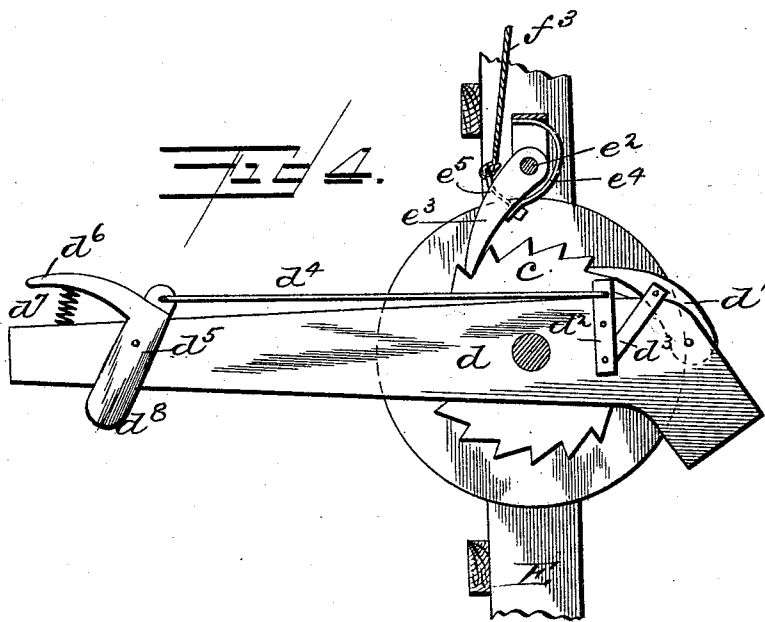
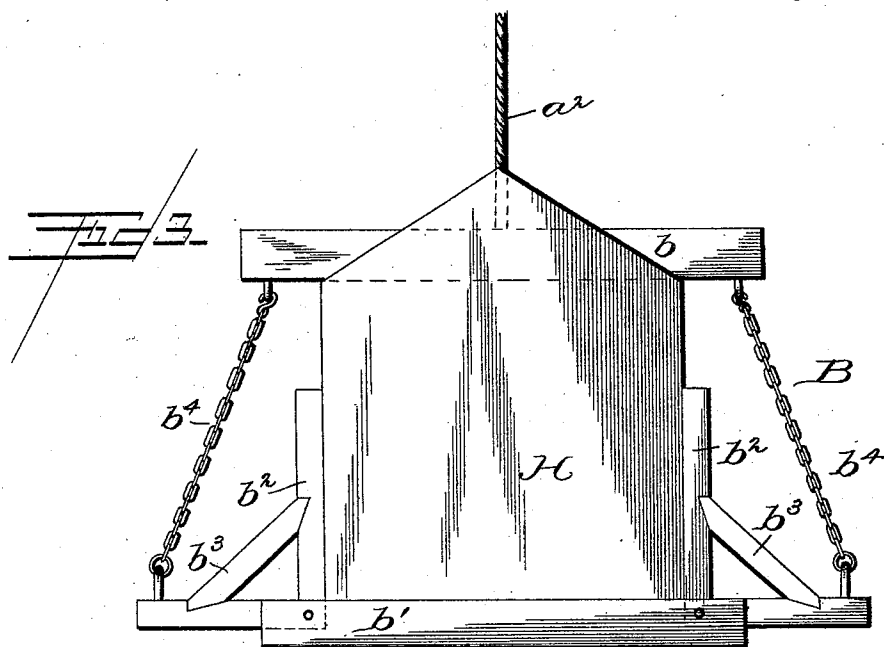
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3 Sheets—Sheet 3.

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WITNESSES

J. H. Duffie,
M. E. Leland.

INVENTOR

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UNITED STATES PATENT OFFICE.

PLEASANT DONOVAN HARPER, OF FULLERTON, ILLINOIS.

ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 478,999, dated July 19, 1892.

Application filed April 25, 1892. Serial No. 430,561. (No model.)

To all whom it may concern:

Be it known that I, PLEASANT DONOVAN HARPER, a citizen of the United States, residing at Fullerton, in the county of De Witt and State of Illinois, have invented certain new and useful Improvements in Portable Grain, Coal, and Vegetable Elevators by Lever-Power; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention has relation to elevators; and it consists in the novel construction and arrangement of its parts.

My invention is designed to elevate a wagon-bed and dump its contents into a crib or other receptacle.

In the accompanying drawings, Figure 1 is a front elevation of my invention with the wagon-body drawn to the top of the elevator. Fig. 2 is an end view of my elevator. Figs. 3 and 4 are detail views.

The following is a description of my invention.

The framework A is preferably of wood, and is constructed of beams and braces of sufficient length and strength to meet the desired ends. Between the two end upright beams and passing through the center upright is journaled in proper bearings an axle *a*, on which and near each end are rigidly secured spools *a'*, to each of which is attached one end of a cable *a²*. The upper ends of said cables each pass over pulleys *a³* *a⁴*, and are each secured to the center of the upper cross-pieces *b*, Fig. 3, of the wagon-bed lifter B. Said pulleys *a³* *a⁴* are secured in proper hangings, which are in turn secured to cross-pieces *a⁵* in the upper part of the frame.

The wagon-bed lifter B is composed of front and rear cross-pieces *b'*, in the ends of which are pivoted elbows *b²*, provided with strengthening-braces *b³*, upper cross-pieces *b*, and side chains *b⁴*, the lower ends of which are secured to the lower outer ends of the elbows *b²*, while their upper ends are hooked to the outer ends of the pieces *b*. When the wagon is driven

into the lower part of the frame, the front and rear pieces *b'* are put under the body. The elbow-pieces *b²*, embracing the sides of the same and the chain *b⁴*, are hooked to the upper cross-pieces *b*, so that when the cables *a²* are pulled on said braces clamp the wagon-body tightly and it is ready to be hoisted to the top of the frame.

The gearings which operate the cables are situated below and are described as follows: In addition to the spools *a'* there are rigidly secured, one on each side of the center upright E, ratchet-wheels *c* and levers *d*. (See Figs. 1 and 4.) Each one of said levers *d* is provided with a dog *d'*, adapted to catch into the teeth of said ratchet-wheel *c*. To the rear end of each of said levers *d* are pivoted short levers *d²*. To the lower free end of said short levers is pivoted the lower end of an arm *d³*, while its upper end is pivoted to the dog *d'*. In the upper end of said lever *d²* is hooked one end of a rod *d⁴*, the other end of which is hooked into the upper end of a lever *d⁵*, pivoted to the lever *d*, the arm *d⁶* of said lever *d⁵* being held up by a small spiral spring *d⁷*. The lower end of said lever is extended downward, forming a foot *d⁸*. Above the said ratchet-wheel *c* and to the center beam E is secured a center bearing *e* and end bearings *e'*. In said bearings is secured a rod *e²*, on which are pivoted dogs *e³*, the noses of which are adapted to catch in the notches of the ratchet-wheels *c* and prevent said ratchet-wheels, and consequently said spools, from turning backward when the levers *d* are raised to take a new grip. Said dogs *e³* are held down to their work by springs *e⁴*, the upper ends of which being secured to the braces *e'* and their lower ends to the said dogs by bolts *e⁵*.

To the lower face of the cross-beam F are secured small pulleys *f*, and to the front face of the beam E are secured small pulleys *f'*, and to each side of said center beam E are pivoted levers *f²*, and to the center of each of said levers is secured one end of a cord *f³*, the other end of which passes up over the pulleys *f* and *f'* and down and are secured to the dogs *e³*.

In the upper end of the frame is a chute G, the outer end of which is hinged to a cross-piece *g*, so that when not in use its inner end

will hang down in the frame. Said chute is wide enough to receive one end of the wagon-body H, and when the wagon-body is hoisted to its place a man ascends the ladder and raises the inner end of said chute by means of the hooks and chains g' and secures it in place by hooking the said hooks over the upper edges of the wagon-body. To the end of the said framework and just under the mouth of the chute G is secured an additional chute I, and to the rear end of said additional chute is attached by means of hooks and chains i still an additional chute J.

The operation of my invention is as follows: The wagon is driven into the framework of my elevator. The body-hoister B is put in position, and the body of the wagon is then ready to be hoisted. The operator then presses down on the levers d , which operation turns the spools a' , winds the cables a^2 on the same, and draws the body up until it is sufficiently high. Then a few additional strokes with the right-hand lever raises the front end of the body and its contents are emptied into the chute G, thence into the chute I, thence into the chute J, and thence into the receptacle. I do not always use the chute J; but when it is not convenient to put the elevator sufficiently near the receiver I use said chute and may still use an additional one, if necessary.

The elevator may be made higher or lower, as circumstances may require, or the uprights may be spliced a short distance above the cross-beam F and secured by clamps, so that the same elevator may be adapted to receptacles with high or low openings.

A ladder may be constructed by nailing cross-pieces to one of the uprights, or a separate ladder may be used to ascend the elevator.

When the load has been emptied, the operator puts his feet on the free ends of the levers d^5 , which throw up the dogs d' , and presses downward, which throw down the outer ends of the levers d until the feet d^5 impinge against the free ends of levers f^2 and presses them down, which operation, by means of the cords f^3 , raises the dogs e^3 . Thus by one operation the dogs d' and e^3 are raised out of the notches of the ratchet-wheels C, so that the same may run backward, and thus allow the cables a^2 to unwind, and the wagon-body descends of its own weight.

Having described my invention, what I

claim as new, and desire to secure by Letters Patent, is—

1. The combination of the frame A, spools a' , rigidly secured on the axle a , ratchet-wheels c , rigidly secured on said axle, levers d , pivoted on said axle and carrying the dogs d' , levers d^5 , pivoted to the free ends of said levers d and provided with feet d^5 , levers d^2 , pivoted to the rear ends of levers d , bar d^3 , one end pivoted to the lower end of said lever d^2 and its other end to the dog d' , rods d^4 , uniting the upper ends of said levers d^2 and d^5 , cables a^2 , one end attached to the spools a^3 and their other ends passing over pulleys a^3 and a^4 in the upper end of said frame, and a body-lifter B, substantially as shown and described, and for the purposes set forth.

2. The combination of the frame A, spools a' , rigidly secured on the axle a , ratchet-wheels c , rigidly secured on said axle, levers d , pivoted on said axle and carrying the dogs d' , levers d^5 , pivoted to the free ends of said levers d and provided with feet d^5 , levers d^2 , pivoted to the rear ends of levers d , bar d^3 , one end pivoted to the lower end of said lever d^2 and its other end to the dog d' , rods d^4 , uniting the upper ends of said levers d^2 and d^5 , axle e^2 , passing through central upright E and secured in position by braces e' , dogs e^3 , pivoted on said rod and working in the teeth of the ratchet-wheels c , levers f^2 , pivoted one on each side of the center upright E, cords f^3 , their lower ends attached to said levers and their upper ends passing over the pulleys f and f' and secured to the dogs e^3 , cables a^2 , one end attached to the spools a^3 and their other ends passing over pulleys a^3 and a^4 in the upper end of said frame, and the body-lifter B, substantially as shown and described, and for the purposes set forth.

3. In an elevator, substantially as shown and described, the body-lifter B, consisting of the upper cross-beam b , lower cross-beams b' , elbow-braces b^2 , pivoted at their elbows, one at each end of said beams, and chains b^4 , attached to the outer ends of said braces and of the beam b , substantially as shown and described.

In testimony whereof I affix my signature in presence of two witnesses.

PLEASANT DONOVAN HARPER.

Witnesses:

WILEY C. CARGILL,
GEORGE W. HERRICK.