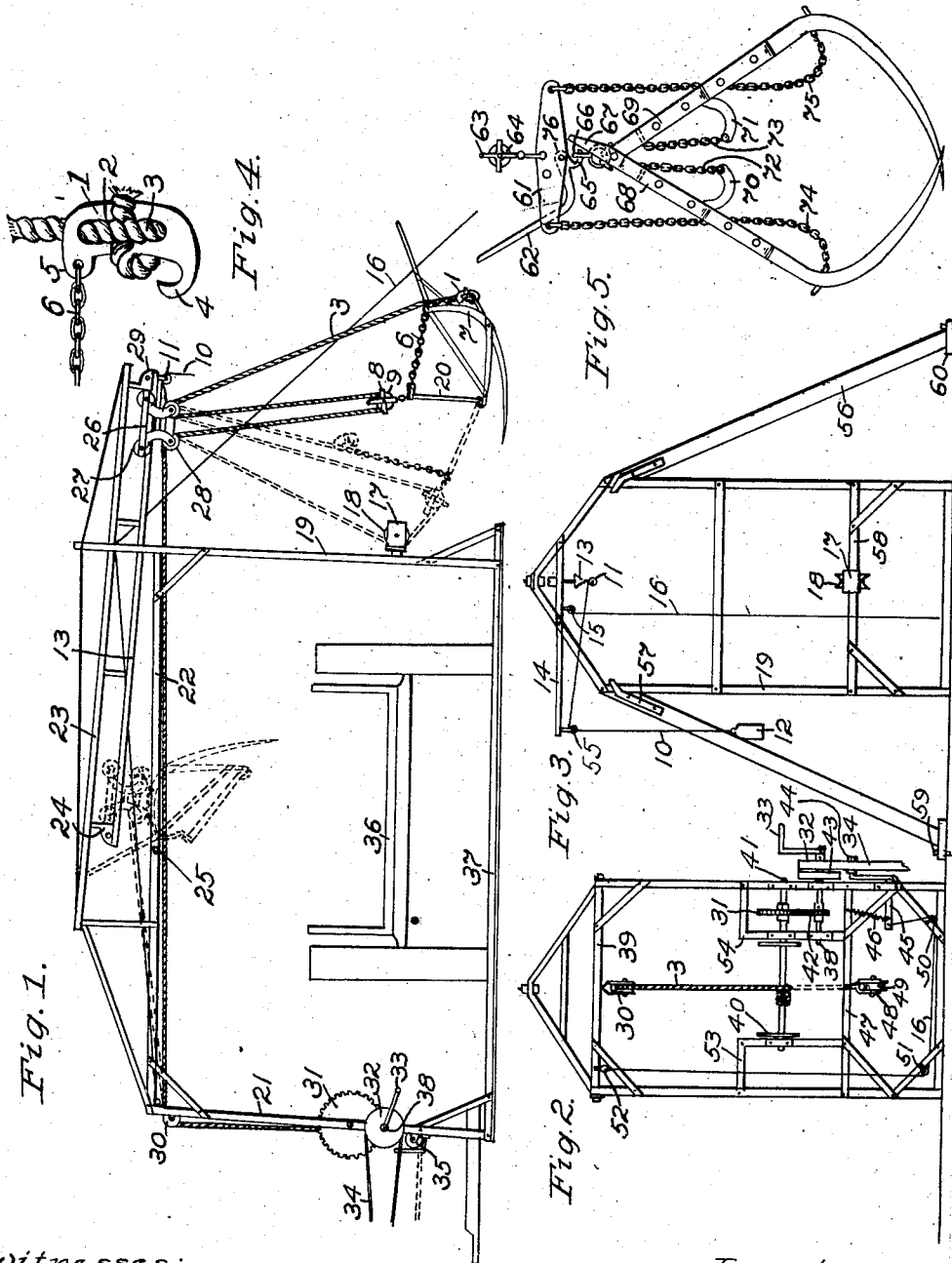


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WAGON LOADING DEVICE.
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992,801.

Patented May 23, 1911.



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UNITED STATES PATENT OFFICE.

RASMUS PEDERSEN, OF PARKERSBURG, IOWA.

WAGON-LOADING DEVICE.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, RASMUS PEDERSEN, a citizen of the United States of America, and a resident of Parkersburg, Butler county, Iowa, have invented certain new and useful Improvements in Wagon-Loading Devices, of which the following is a specification.

My invention relates to improvements in wagon loading devices, and the objects of my improvements are to provide means for insuring a return to its first position of the carriage, to furnish simple and convenient means for detachably connecting the rear end of the draft-cable to the rear part of the fork or scoop for more convenient release when dumping, and to incorporate powerful draft-mechanism suitable for hand or other power and adapted to apply draft to the draft-cable to load said fork or scoop, elevate and carry the latter to its dumping position. These objects I have attained in the mechanism which is hereinafter described and claimed, and which is illustrated in the accompanying drawings, in which:

Figure 1 is a left-hand side elevation of my improved wagon-loading device, the full lines showing the loading position while the dotted lines indicate the dumping position of the fork or scoop and of the connected moving parts. Fig. 2 is a front end elevation of said device. Fig. 3 is a rear end elevation of the framing and supports of said device. Fig. 4 is an enlarged detail view of the D-shaped securing hook on the rear end of the draft-cable. Fig. 5 is a side elevation of a grapple adapted to be used in connection with my wagon-loading device when desired in place of a fork or scoop.

Similar numerals of reference designate corresponding parts throughout the several views.

The framing consists of a base 37 upon whose corners are erected and secured corner-posts 21 and 19 at front and rear respectively, and preferably made from angle-iron. A cross-bar 39 connects the tops of the front uprights or posts 21, said cross-bar supporting a depending-pulley-block 30. Another cross-bar 47 connects said posts 21 lower down and in turn supports spaced-apart angular brackets 53 and 54. In bearings on said brackets and on the left-hand post 21 is rotatably mounted a horizontal shaft 41 on which a winding-drum 40 is secured between said brackets, a gear-wheel 31 be-

ing secured on said shaft between the bracket 54 and the post 21. Another shaft 38 is rotatably mounted in bearings on the bracket 54 and the adjacent post 21, and carries a pinion 42 whose teeth are in mesh with the teeth of the gear-wheel 31. On the part of the shaft 38 which extends outwardly from the bearing on said post are mounted the pulleys 43 and 32, the pulley 32 being loose and the pulley 43 tight on the shaft. A hand-crank 33 is secured to the outer end of said shaft. In order to shift the driving-belt 34 to and from one of said pulleys to the other I use the following described means. A bell-crank lever 45 is medially fulcrumed at its angle and has at the end of its upwardly-extending arm a belt-shifting pulley 44 which movably engages the belt 34. To the inwardly extending arm of said lever is secured one end of a pull-rope 16, the latter being passed downward under a small pulley 50, thence carried to the left and passed about another pulley 51, thence brought upward about a pulley 52 and thence being carried to the rear. A tension-spring 46 is connected between the cross-bar 47 and the inwardly-directed arm of said lever, and serves to retract said arm to thereby ordinarily keep the driving-belt shifted on to the loose pulley 32. By the use of said pull-rope 16, the tension of said spring is overcome, and the lever moved to shift the driving-belt upon the tight pulley 43, when it is desired to set the winding-drum 40 into rotation.

The forward end of the draft-cable 3 is wound upon the drum 40, but may be removed therefrom and passed about a sheave 49 in a block 48, the latter suspended from the cross-bar 47, when it is desired to apply other means of traction to said cable.

The frame may be supported by means of corner-props 56 which extend toward the upper corners of the said corner-posts, leaning from their base-blocks 60, the latter being pinned to the ground by spikes 59. The upper end of each prop 56 has a projecting fork 57 whose ends detachably embrace the upper end of the abutting post. The upper ends of said corner-posts are secured to and support a framework which in turn supports a rearwardly-inclined bar 23, and from the latter is suspended a rearwardly-inclined rail or Y-beam 13 used as a track-support for a movable carriage 26. Said rail 13 lies along the medial longitudinal line of the de-

vice and the connections between it at 24 and 29 respectively at the front and rear serve as stops at those places for said carriage. A cross-rod 25 extends between the side-bars 22 and is used for a purpose to be presently described. The space between the front posts 21 and rear posts 19 and under the side-bars 22 is large enough to permit of sufficient clearance for a wagon 36 which may be drawn over the platform 37. The platform 37 may be mounted on wheels for transportation. The carriage 26 has carrying-wheels 27 movable along either side of the upper surface of the rail 13. It has also depending hangers on which are pivoted forward and rear pulleys 28.

7 is a fork or scoop having a bail 20, also a swivel at the back for detachable connection to the hook 1 on the rear end of the cable 3, and with rearwardly extending handles for use by the operator. The draft-cable 3 is passed upward from the winding-drum 40 and over the pulley 30, thence rearwardly to the carriage 26 where it is passed over the pulleys 28 and thence downwardly, for connection by means of the hook 1 to said fork of scoop.

17 is a swiveled block secured to a cross-bar 58 connected between the two rear posts 19. In said block is a sheave 18, and said block is open at one side to permit of the reeving or unreeving of the cable 3 therein.

A pulley 9 is movably supported on the slack of the cable 3 between the two pulleys 28, and its block 8 is connected both to the bail 20 of said fork or scoop and to one end of a short chain 6. The rear end of the cable 3 is secured within a slot 2 in a D-shaped body 1, the latter having a hook 4 at its lower forward corner, and a perforated lug 5 at its upper forward corner, the other end of the chain 6 being secured in the perforation in said lug. The hook 4 is adapted to be detachably connected to the swivel-hook on the rear part of said fork or scoop.

A rod 14 is supported by the framework and projects to the left, and supports a fixed pulley 55. A fixed pulley 11 is supported by the rear end of the rail 13. A cord 10 has its forward end secured to the carriage 26 and is then passed about the pulleys 11, and 55, and a heavy weight 12 is secured to its depending end. This weight serves to propel the carriage downward along the inclined rail 13 when the draft-cable 3 is released from draft.

In loading the fork or scoop 7, the cable 3 is reeved over the pulley 18, and the hook 4 detached from the swivel on the fork or scoop, when the forward draft upon the cable draws forward the fork as indicated by the dotted lines in Fig. 1. The loaded fork being under the carriage 26, the cable 3 is unreeved from the pulley 18, and the hook 4 engaged with the swivel on the back of the

fork. The cable then is drawn forward again, taking up the slack between the pulleys 28, thus lifting the fork, and then the carriage is drawn forward along the rail 13 until brought against the stop 24. As indicated by the dotted lines, the tension of the cable 3 then causes the fork to turn over dumping the load into the wagon 36 underneath.

When bodies of a certain kind have to be loaded, I use a grapple as shown in Fig. 5. In this event, the pulley 64 is placed on the slack of the cable 3 between the pulleys 28 of the carriage 26, and the end of the cable 3 then secured to the carriage. The block 63 of the pulley 64 is connected by a link to the middle of the cross-bar 61. To the cross-bar 61 is pivoted at 76 one end of a trip-arm 62. A depending hook 65 is integral with said trip-arm and detachably receives a link 66. 68 and 69 are opposed tines of the grapple which are pivoted together. Link-chains 74 and 75 connect the angles of said tines respectively with the ends of the bar 61. At points of the tines intermediate between their angles and their pivot are inwardly-directed curved arms 70 and 71 respectively. Linking-chains 72 and 73 respectively connect the link 66 with these arms by passing upward between the tines, the arms thus giving an increased support and leverage to the tines. A stop 67 on one of the tines serves to prevent too much spread to the tines by engaging with a projection on the inside face of the tine pivoted thereto (not shown). When the grapple is to be loaded, its link 66 is unhooked to spread the tines. When the tines are engaged with the contained object to be loaded, the link is slipped over the hook 65, and the cable 3 then moved, which lifts the grapple and load, then carries them forward. When the grapple arrives at a certain position over the wagon 36, its trip-arm 62 is thrown back by the stop-rod 25, which causes the hook 65 to become disengaged from the link 66, and the tines 68 and 69 spread, releasing their load and depositing it in the wagon-box.

The construction of my wagon loading device is very simple, light but well-braced and strong, and easy of operation by hand, horse or by other power.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is:

1. A wagon loading device, comprising, in combination, upright posts, connections between said posts, a rearwardly inclined rail suspended from said connections, stops at the forward and rear ends of said rail, a carriage movable along said rail between said stops, said carriage having two pulley-sheaves rotatable therein, a draft-cable passed about said sheaves and carrying a movable pulley on its slack portion between

said sheaves, a pulley-sheave rotatably mounted in an open block the latter swiveled to a fixed support, and adapted to removably receive said draft-cable, a fixed support for the said swiveled block, a fork or scoop, a D-shaped hook slotted to receive and secure therein the rear end of said draft-cable, the upper corner of said hook being orificed, a linking-connection between the last-mentioned orifice in said hook, said pulley on the slack portion of the draft-cable, and the bail of said fork or scoop, the said hook being adapted to detachably engage the back part of said fork or scoop, and means for exercising a forward draft on said draft-cable.

2. A wagon loading device, comprising, in combination, an inclined rail, means for supporting said rail spaced apart from the ground, said rail having stops at its front and rear ends, a carriage movable on said track and containing pulley-sheaves, a draft-cable passed about said sheaves, a pulley movably suspended on the slack part of said draft-cable between said sheaves, a substantially D-shaped device secured to the rear end of said cable, said device having a hook at its lower forward corner and engaging-means at its upper forward corner, a fork or scoop having a bail, a linking-connection between said bail, the block of the pulley suspended on the slack part of said cable, and the engaging-means on said D-shaped device, the hook of the latter being adapted to be detachably secured to the rear part of said fork or scoop.

3. A wagon loading device, comprising, in combination, an inclined rail, means for supporting said rail spaced apart from the ground, said rail having stops at its front and rear ends, a carriage movable along said rail and containing pulley-sheaves, a draft-cable passed about said sheaves, a pulley movably suspended on the slack portion of said cable between said sheaves, a fork or scoop provided with a bail, detachable linking-connections between said pulley suspended on the slack part of said cable, said bail, and the rear end of said draft-cable, a detachable connection between the rear end of said cable and the back part of said fork or scoop, and means for exercising a forward draft upon said cable.

4. A wagon loading device, comprising, in combination, a fork or scoop provided with a bail, engaging-means on the back part of said fork or scoop, a rail, pulleys mounted in a block movable along said rail, a draft-cable passed about said pulleys, movable connecting-means between the slack of said cable between said pulleys and the bail of said fork or scoop, a D-shaped body having a hook on its forward lower corner

adapted to be detachably secured to the engaging-means on the rear part of said fork or scoop, and a linking-connection between said bail and the forward upper corner of said D-shaped body.

5. A wagon loading device, comprising, in combination, a fork or scoop provided with a bail, engaging-means on the back part of said fork or scoop, a rail, pulleys mounted in a block movable along said rail, a draft-cable passed about said pulleys, movable connecting-means between the slack of said cable between said pulleys and the bail of said fork or scoop, detachable connecting-means between said bail, the rear end of said draft-cable and the engaging-means on the rear part of said fork or scoop, a winding-drum upon which the forward end of said draft-cable is wound, a gear-wheel on the winding-drum shaft, a pinion intermeshing with said gear-wheel, tight and loose pulleys mounted on the pinion-shaft, a driving-belt slidable to and fro from one of said pulleys to the other, a bell-crank lever fulcrumed at its angle, a shifting-clip on one arm of said lever engaging said driving-belt movably, a pull-cord connected to the other arm of said lever, and means for exercising a yielding resilient tension upon the last-mentioned arm of said lever in a direction opposed to the draft of said pull-cord.

6. A wagon loading device, comprising, in combination, a fork or scoop provided with a bail, engaging-means on the back part of said fork or scoop, an inclined rail spaced away from the ground, pulleys mounted in a block movable along said rail, a draft-cable passed about said pulleys, movable connecting-means between the slack part of said cable between said pulleys and the bail of said fork or scoop, detachable connecting-means between said bail, the rear end of said draft-cable, and the engaging-means on the rear part of said fork or scoop, means for exercising a forward draft on said movable pulley-block on said rail adapted to draw said block up the incline of the rail, a pulley in a fixed block, and a cord having one end secured to the block movable on said rail, then passed over the fixed block and then having a weight suspended on its other end and adapted to pull the movable block down the incline of said rail when forward draft ceases upon said cable and the latter is released therefrom.

Signed at Waterloo, Iowa, this 5th day of July, 1910.

RASMUS PEDERSEN.

Witnesses:

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