

R. PEDERSON.
WAGON LOADING DEVICE.
APPLICATION FILED DEC. 10, 1907.

898,501.

Patented Sept. 15, 1908.

3 SHEETS-SHEET 1.

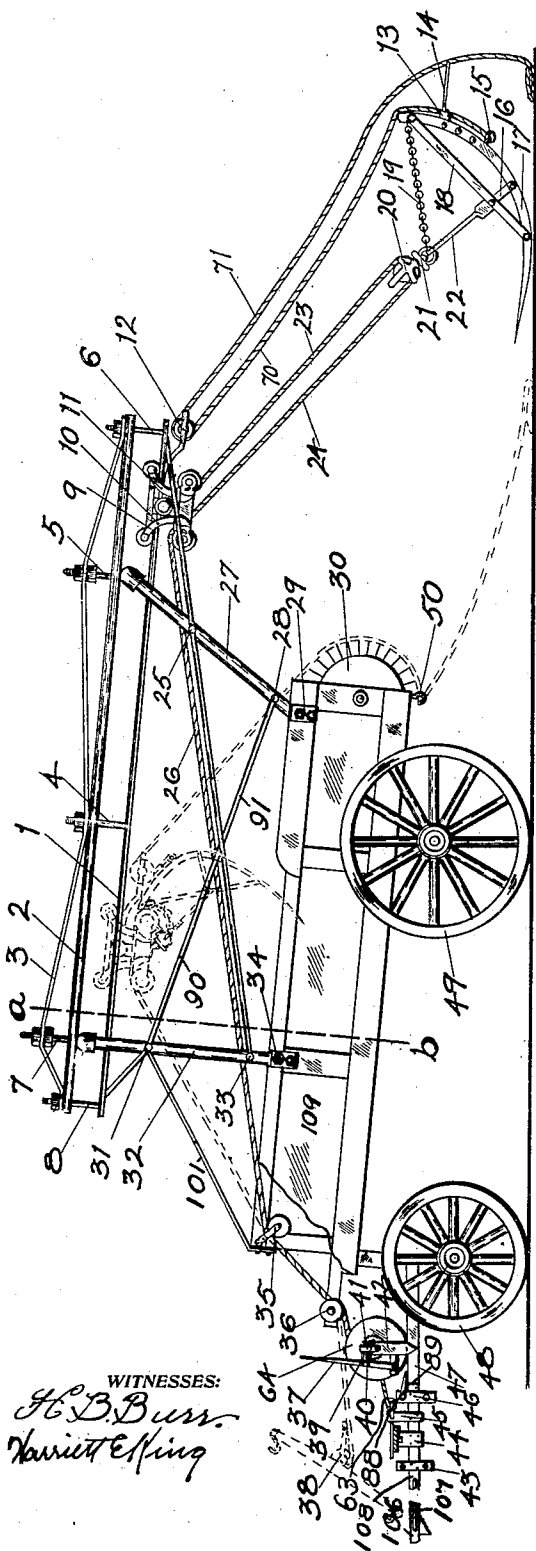


FIG. 1.

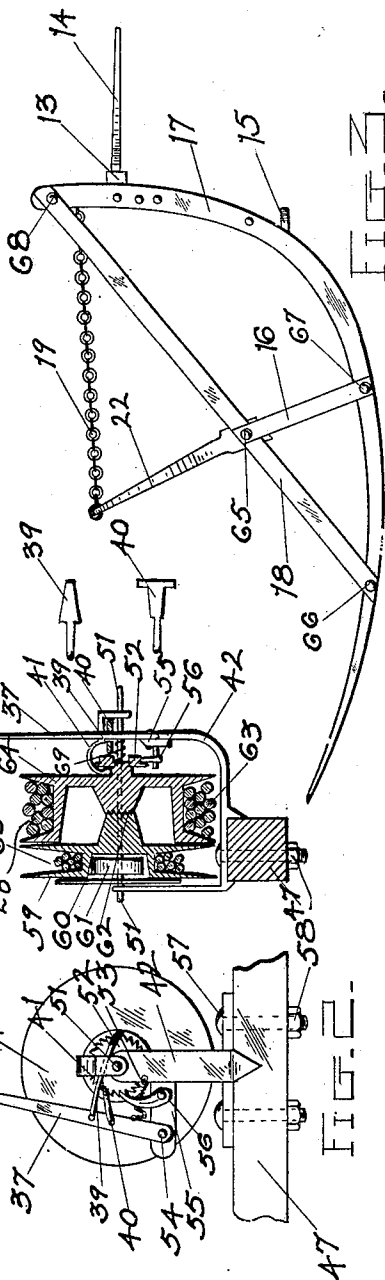


FIG. 2.

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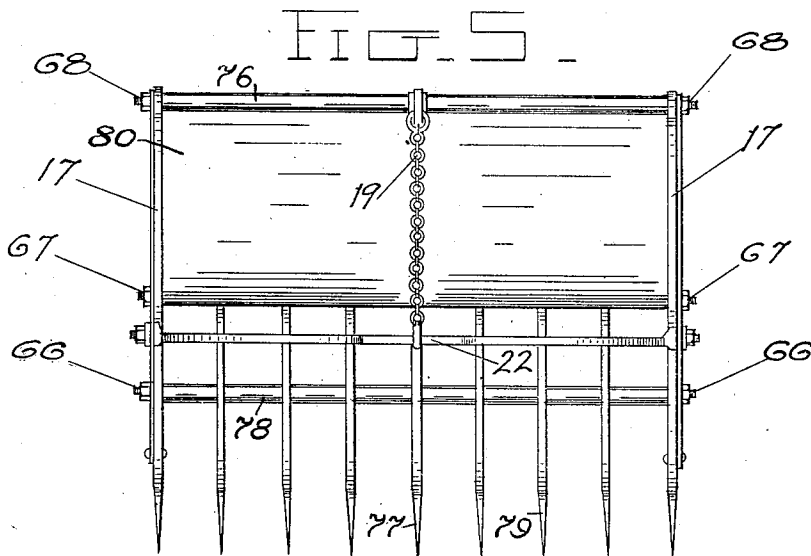
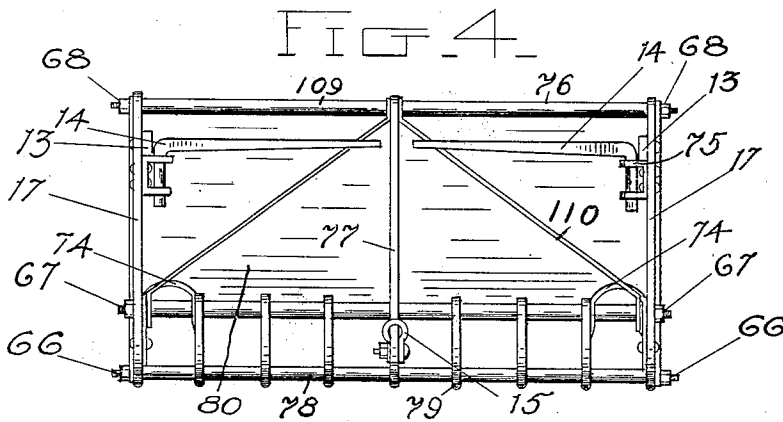
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3 SHEETS—SHEET 2.



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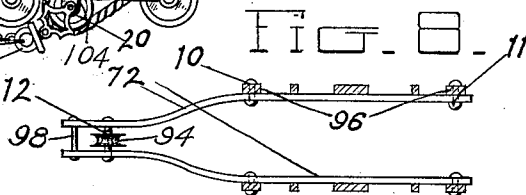
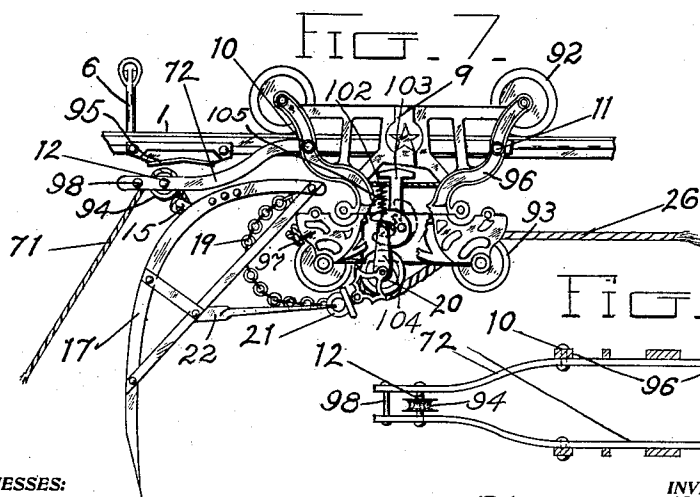
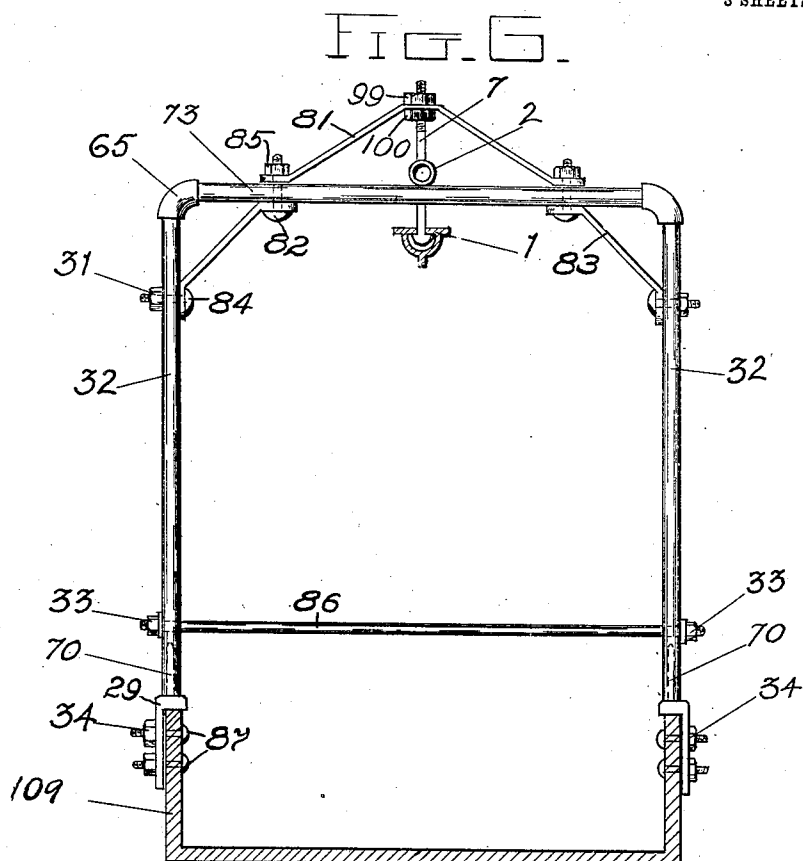
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3 SHEETS—SHEET 3.



WITNESSES:

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UNITED STATES PATENT OFFICE.

RASMUS PEDERSON, OF PARKERSBURG, IOWA.

WAGON-LOADING DEVICE.

No. 898,501.

Specification of Letters Patent.

Patented Sept. 15, 1908.

Application filed December 10, 1907. Serial No. 405,875.

To all whom it may concern:

Be it known that I, RASMUS PEDERSON, 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 invention are to furnish, first, an improved removable framework; second, to provide a more convenient construction of fork or scoop; third, to render the device more convenient in its dumping action, and otherwise to effect decided improvements in construction and operation over my wagon loading device which was patented by the United States under Number 843,695, on February 12th, 1907, and the device of a similar character shown in my United States application for a patent, Serial Number 366,922. These objects I have accomplished by the means which are hereinafter described and claimed, and which are illustrated in the accompanying drawings, in which:—

Figure 1 is a side elevation diagram of my complete wagon loading device as applied to a manure spreader. Fig. 2 is an enlarged detail side elevation of the interacting cable drums mounted on the rear portion of the wagon pole. Fig. 3 is an enlarged detail side elevation of the loading scoop. Fig. 4 is a rear elevation of said scoop, and Fig. 5 is an upper plan view of the same. Fig. 6 is an enlarged transverse section taken along the line *a—b* in Fig. 1, and shows a rear elevation of the front frame uprights. Fig. 7 is an enlarged detail side elevation of the automatic trip and catch device used for dumping the contents of said scoop. Fig. 8 is an upper plan view of the parallel horizontal bars of said trip and catch device as detached from the carriage thereof, and Fig. 9 is a central vertical axial section of the interacting cable drums shown in side elevation in Fig. 2.

Similar numbers refer to similar parts throughout the several views.

My improved wagon loading device is herein represented as detachably mounted upon a manure spreader. The manure spreader is of an ordinary type having a wagon-box 109 mounted on front carrying wheels 48 and rear carrying wheels 49, and supplied at one end with a beater-drum 30.

The supporting frame for my device is con-

structed as follows: Vertical pintles 70 extending from angle-bars 29 are arranged along the outer faces of the wagon-sides as shown, and secured thereto by bolts 87 equipped with nuts 34. As shown in Fig. 6, the uprights 32, having seats or sockets at their lower ends for the pintles 70, are set vertically at a location over said wagon-box 109 nearly midway between the front and rear carrying wheels. The front uprights 32 have a cross-brace-rod 86 spaced a desired distance above the wagon-box, but low enough as not to interfere with the passage of the scoop thereover, such brace being passed through orifices in the uprights and secured thereto by nuts 33. A transverse tubular beam 73 is connected to the ends of said uprights by means of couplings 65. The rear uprights 27 are similarly secured to the wagon-box, and secured together by a cross-rod 28 and a top-beam with couplings, but are tilted rearwardly at a sufficient angle as shown in order to be in the line of greatest strain over the rear of the box to sustain the weight of the scoop in action and while being lifted. The upper angles of the frame are strengthened by means of corner braces 83 secured to the cross-rods 73 by means of bolts 82 and nuts 85, and to the uprights 32 and 27 by means of bolts 84 and nuts 31 and 25 respectively.

The numeral 2 designates a tube resting upon and projecting beyond the cross-beams 73 to the front and rear.

The numeral 1 designates a Y-beam of the same length as and parallel with the tube 2 below it, and located a short distance below the cross-beams 73. Hanger-bolts 8, 4, and 6 are used to suspend the Y-beam 1 from the tubular beam 2 at front, intermediate and rear points thereof, respectively.

The numerals 7 and 5 designate uprights extending from the tube 2 near its front and rear ends vertically, and threaded at their upper ends to receive the nuts 99 and 100, between which truss-rods 81 are seated, the outer ends of the truss-rods being secured to the cross-beams 73 by the bolts 82 and nuts 85. The numeral 3 designates a longitudinal truss-rod for the tubular beam 2.

The numerals 90 and 91 designate side braces for the uprights 32 and 27, connected respectively between the fastenings at 31 and 28, and at 33 and 25, respectively. Braces 101 connect the front uprights 32 to the front

end of the wagon-box 109. This whole structure may be removed from the wagon-box, and its parts knocked down easily for transportation.

5 A traveling carriage 9 is adapted to move longitudinally along and suspended from the Y-rail or beam 1. The carriage has a side framework on each side spaced apart, and having front and rear standards 96, to which
10 the horizontal parallel bars 72 spaced apart are secured by means of the bolts 10 and 11 respectively at rear and in front. The rear portions of the bars 72 are brought closer together, and are connected by bolts 12 and 98,
15 and on the bolt 12 a small pulley 94 is rotatably mounted.

The scoop 17 has a bail 22, to which is linked a ring 21 connected to a block in which is pivoted a pulley 20. On the same pivot as
20 the pulley 20 is a hook 104 which is adapted to engage and be received by a movable hook 102 the latter pivoted on a vertically movable contact-piece 103, adapted to move vertically, the head of the latter being sustained slidably by said carriage, and its upper surface being arched so as to slide under and engage the stop 95 depending from the rear portion of the rail 1. When the head of the contact-piece 103 is forced down by the
30 stop-piece 95, the hook 102 is released from the hook 104, leaving the scoop with its pulley 20 free to move downward with the slackened rope or cable 26. When the carriage moves forward out of contact with the stop
35 95, a spring 105 will lift the hook 102 and connected hanger 103, so that said hook will catch and retain the hook 104, when the scoop has been drawn up tight to the carriage. The rollers 92 of the carriage are adapted to run along the upper surfaces of the Y-rail edges. To the rear part of the frame 97 the rear end of the cable 26 is secured, and the latter passes about the pulleys 93 in said carriage 9 and is brought forward,
45 as shown in Fig. 1, to pass about pulleys 35 and 36 pivoted to the front end of the box 51, and thence wound around and secured to the drum 64.

If desired the forward end of the cable 26,
50 may be connected, independent of the drum 64, to any other draft appliance, and left as indicated by the reference numeral 38 as applied to the dotted forward extension of the said cable. The pulley 20 rests upon
55 the slack part of the cable 26 between the front and rear pulleys 93 of the carriage 9. The device shown in Figs. 2 and 9 is used when it is desired to actuate the cable 26 by traction applied to the detachable front
60 part 106 of the two-part pole 47.

The numerals 59 and 64 designate drums, having toothed counter-part faces on their contacting sides, and the drum 64 is adapted to slide on their common shaft 51. The drum
65 64 has a hub containing a circumferential

groove into which dips the incurved end of a finger 41 extending from a slide on the outer end of said shaft 51. When the slide is moved in one direction the drums are thrown into mesh with each other, but disengaged from each other when thrown in the other direction. A ratchet-wheel 52 is integral with the outer face of the drum 64. The hand-lever 37 has its lower end pivoted to a bracket 55 extending from the standard 42, which is secured to the pole 47 by bolts 57 and nuts 58. A guard pawl 56 is pivoted to the bracket 55 to engage the teeth of said ratchet-wheel, and a spring 53 connected between said pawl and the standard 42 tends to keep the pawl in engagement.

To the lever 37 the slides 39 and 40 are pivoted. The slide 39 contacts with the outer face of the ratchet-wheel 52, and when the lever is thrown toward the ratchet, the slide 39 which, as is indicated in its detached plan view, is diminished in width from the lever toward its outer end, drives the drum 34 laterally by sliding it along the shaft 51, so that its teeth on its further face enmesh with the teeth on the adjacent face of the drum 59. When the lever 37 is moved in the reverse direction, the slide 39 is withdrawn releasing the drum 64 so that the other slide 40, which is formed to diminish in width from its outer end toward said lever, may push out the finger 41 to draw away and disengage the drum 64 from the drum 59, so that the latter may be rotated independently of the other. The outer end of the slide 40 has laterally projecting lugs to prevent its withdrawal from contact with the finger 41.

I have shown in Fig. 1 a draft device, being a two-part tongue or wagon-pole composed of a detachable part 106 and a rear portion 47 connected to the running-gear of the wagon 109. The front part 106 is connected by means of side-rods 107 with the plates 108 adapted to slide over the sides of the rear-part 47. The plates 108 have side standards 43 and 46, with rollers to bear against the upper and lower surfaces of 47, the rear standards 46 having pivotally connected thereto a hook 88 adapted to slide rearwardly over a lug on 47 and catch to hold the two parts of said pole together. The double-tree is pivoted to a cross-bar on standards 44 arising from the plates 108. To other standards 45 on said plates is connected the forward end of a short cable 63 secured to and wound about the drum 59. When the team is moved forward, the draft from the double-tree is communicated to the cable 63, the drum 59 is wound up carrying with it the connected drum 64, and pulling forward the cable 26 rolled about the drum 64. The hook 88, before starting forward, is disengaged from the lug on the pole-part 47. A coiled spring 61 in the drum 59 is con-

connected to it and to its shaft 51, and is wound up when the drum 59 is rotated by the forward traction. When the team has arrived at the extreme forward limit of its movement, the hand-lever 37 should be so shifted as to cause the slide 40 to move the finger 41 to draw the drum 64 out of engagement with the drum 59, so that the coiled up spring 61 may unwind, rolling about said drum the slack cable 63. In practice the Y-rail 1 is slightly inclined downward rearwardly, so that when the scoop 17 has been dumped and the two winding-drums disengaged so that the drum 64 may rotate freely in a reverse direction, the rolling carriage for said scoop will move backward impelled by its own weight alone.

The forward end of a cable 70 is fastened to a swivel 15 secured to the middle tooth 77 of the scoop 17, at a point to the rear of the scoop's center of gravity. The cable 70 is passed about the pulley 94 and its rear end left free as shown. If desired, however, the rear end of the cable 70 may be secured to a hook 50 at the end of the spreader-box 109 leaving sufficient slack to permit it to act upon the scoop to allow the latter to move to a desired station over the box, at which place the forward traction causes the scoop to dump itself automatically, as is indicated by the dotted lines in Fig. 1.

The scoop 17 is particularly designed as shown to be especially convenient for use in handling manure for loading into distributors, and consists essentially in detail of a plurality of curved tines 79 mounted on transverse rods 66 and 67, with spacing cylinders about said rods between the tines as shown at 78 and 109 respectively. The side tines and the middle tine 77 are extended farther back and bent upwardly and secured together at their upper rear ends by a transverse rod 68, with like spacing cylinders 76 between them on said rod. The upper side of the rear portion of the scoop is covered with a plate 80 properly secured thereto. Bracing connections 74 extend between the outer pairs of tines, and other braces 110 extend from the outer tines and are secured to the transverse rod 68. The bail 22 has a pivotal connection 65 with the outer tines at points near the center line of gravity of the scoop. A chain 19 connects the middle of the bail 22 with the rear end of the scoop to limit forward movement of said bail.

The numeral 16 designates side braces extending from middle points of the outer tines 17 to intermediate portions of the braces 18, the latter extending along the sides of the scoop from front to rear.

In order to guide the scoop while being used to excavate material I have provided handles 14 pivotally connected thereto to extend rearwardly. The front portion of each handle is bent downward and rocks in bear-

ings 75 bracketed to the side tines 17 to extend inwardly thereof. A plate 13 is fastened to each side tine 17 to extend rearwardly into the path of movement of the handle, to prevent the handle from swinging outwardly where it might engage with the spreader or track-supports while being carried over the spreader.

When the filled scoop has been elevated, the continued draft of the forwardly moving cable 26 pulls the carriage 9 away from the stop, and the catch engages the hook of the pulley-block connected to the scoop, the scoop moving forward along the suspended rail to the point selected for dumping. If the end of the rear cable 70 is held by the operator, he simply pulls on the cable when the scoop has arrived at the desired dumping location, and the rear upper part of the scoop is thereby elevated, which causes the scoop to turn vertically and discharge its load. In case the cable 70 is fastened at some part of its length to the hook 50 situated on the rear part of the spreader-box 109, the scoop can only travel ahead as far as the slack of such cable permits, when the forward traction of the cable 26 coupled with the rearward pull of the cable 70 causes the scoop to dump automatically, as before described.

In cases where the device is mounted on a vehicle not supplied with my improved two-part pole, the traction may be supplied direct to the cable 26 by a horse, whose tugs are connected to a swingle-tree secured to the forward end of the cable.

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

1. In a wagon loading device, the combination with a wagon, of a beam removably supported thereabove, a track-rail suspended from and parallel to said beam and adapted to swing therefrom on hanger-bolts, such rail extending a distance beyond a rearwardly tilted support, a fork or scoop mounted to travel in suspension from said beam and track-rail, and a trip-rope connected to the said fork or scoop and adapted to cause the latter to dump, by reason of a tractive effort thereon, its load into the wagon-box at any desired location.

2. In a wagon loading device, the combination with a wagon, of a track rail removably supported thereover, a carriage mounted upon said track rail and adapted to move longitudinally thereover, a cable having one end secured to said carriage with its forward end passed over a pulley pivoted in the carriage, a pulley-block having its pulley adapted to ride upon the slack of said cable between its fixed and slidable connections with said carriage, a fork or scoop suspended from said pulley-block, a contact-piece on one end of said track rail, a hook on said pulley-block, a movable catch on said carriage

adapted to interlock with the said hook and hold said fork or scoop in suspension from the carriage, said contact-piece being adapted to trip said catch and release said hook there-
5 from, and means for dumping said fork or scoop in a desired location.

3. In a wagon loading device, the combination with a wagon, of a track rail supported longitudinally and removably there-
10 over, a fork or scoop mounted to travel in suspension from said track rail to a position for dumping into the wagon-box, a traction-cable attached to the upper part of said scoop and extending forwardly to some means for
15 exercising a tractive effort, a cable attached to the rear part of said fork or scoop and having a slidable connection with said track rail, the rear end or portion of said last-mentioned cable to the rear of its slidable connection
20 being secured to any suitable fixed body to cause it to automatically dump said fork or scoop when the latter is by means of the traction of the first-mentioned cable brought to a desired location over the wagon-box.

25 4. In a wagon loading device, the combination with a wagon, of a track rail located thereabove, a separable tubular framework removably supported on said wagon and adapted to sustain said track rail in suspen-
30 sion, a carriage provided with rollers adapted to travel lengthwise along and upon said track rail, said carriage having a pulley pivoted in its forward lower portion, a cable whose end is passed over said pulley and secured to the lower rear part of said carriage,
35 a fork or scoop slidably suspended on the slack of the cable between the said pulley and the cable's connection to the rear end of the carriage, a pulley pivoted to the rear end
40 of said carriage, and a second cable connected to the rear upper part of said fork or scoop and passed about the pulley on the rear end of said carriage to depend therefrom and be connected to some means of tractive effort.

45 5. In a wagon loading device, the combination with a wagon, of a fork or scoop mounted for travel over said wagon, means for supporting said fork or scoop in its travel
50 over said wagon, means of detaching it therefrom, a draft cable connected to said fork or scoop carried forward therefrom and secured about a rotatable drum, means for rotating said drum to exercise a tractive effort on said
55 cable, a ratchet-wheel secured to said drum to rotate therewith, and a guard-pawl in engagement with the teeth of said ratchet-

wheel and adapted to permit it to rotate only in one direction.

6. In a wagon loading device, the combination with a wagon, of a knock-down supporting frame removably connected thereto and thereover, a fork or scoop mounted to travel under and in suspension from said supporting frame, said fork or scoop being provided with a plurality of forwardly extending
65 tines, handles pivotally connected to the said fork or scoop adapted to swing inwardly or rearwardly into line with the sides of the scoop, and means for preventing said handles from swinging laterally outward beyond the
70 lines of the sides of the scoop.

7. In a wagon loading device, the combination with a wagon, of a fork or scoop mounted to travel thereover, said scoop having a plurality of tines, a horizontally, but
75 non-vertically movable supporting device suspended above said wagon, and a cable connected to the rear end of said fork or scoop and slidably movable about said movable supporting device with its rear end de-
80 pending therefrom, and a fixed connection with the rear end of said wagon for the rear end of said cable, whereby the said scoop is dumped in a desired location in said wagon-box when it has been carried forward to the
85 extent of the length of said cable.

8. In a wagon loading device, the combination with a wagon, of pintles secured to the sides thereof, tubular uprights removably
90 supported on said pintles, cross-tubes removably connected between the upper ends of transversely opposite tubular uprights, a longitudinal tube supported upon and removably secured to said cross-tubes in a medial
95 position between said uprights and projecting to the rear of said wagon, a track-rail secured to and suspended from said longitudinal tube, a carriage adapted to move along and in suspension from said suspended track rail, a fork or scoop suspended from and detachably connected to said carriage, means
10 for moving said carriage longitudinally along said track rail, and means slidably connected between said carriage and said fork or scoop adapted to dump the latter in a predetermined location.

Signed at Waterloo, Iowa, this 21st day of Nov. 1907.

RASMUS PEDERSON.

Witnesses:

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G. C. KENNEDY.