A. O. AASLAND.

MANURE LOADER.

APPLICATION FILED JUNE 24, 1911.

1,004,616.

Patented Oct. 3, 1911.

4 SHEETS—SHEET 1.

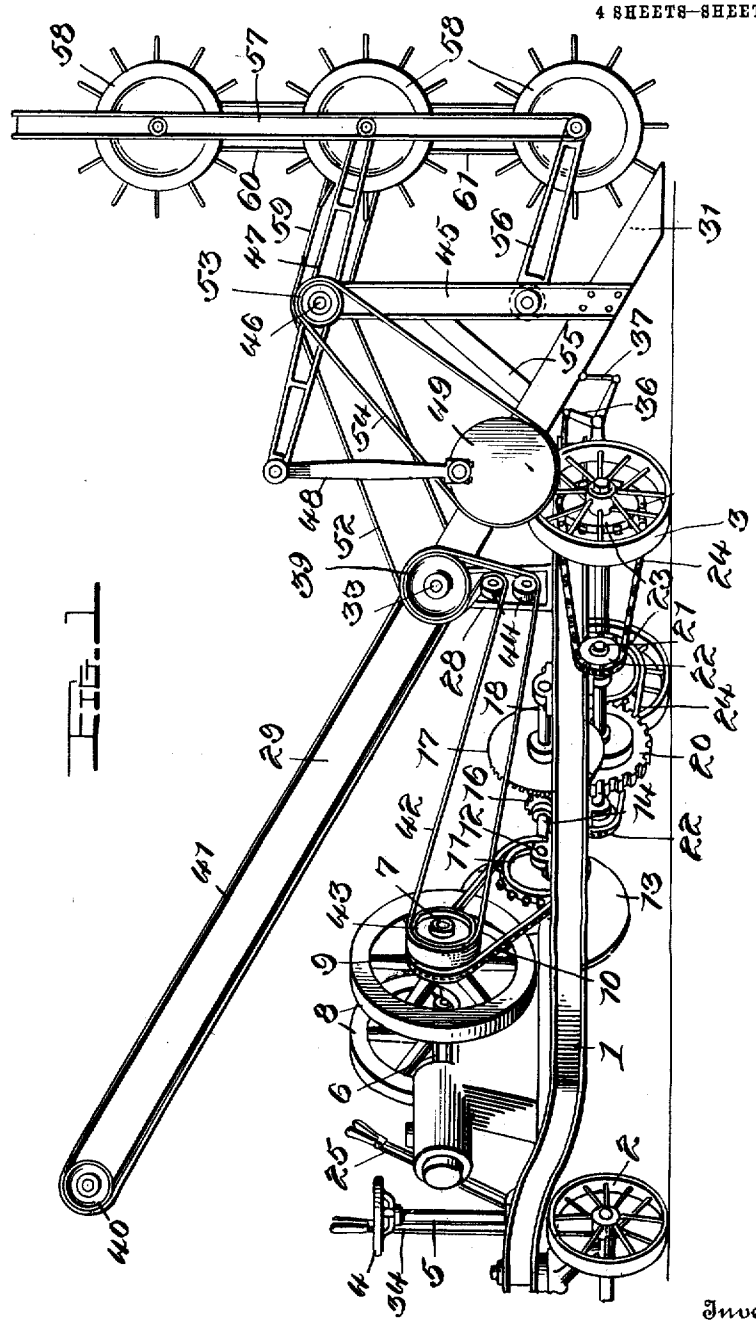


FIG. 1

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Witnesses

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4 SHEETS—SHEET 2.

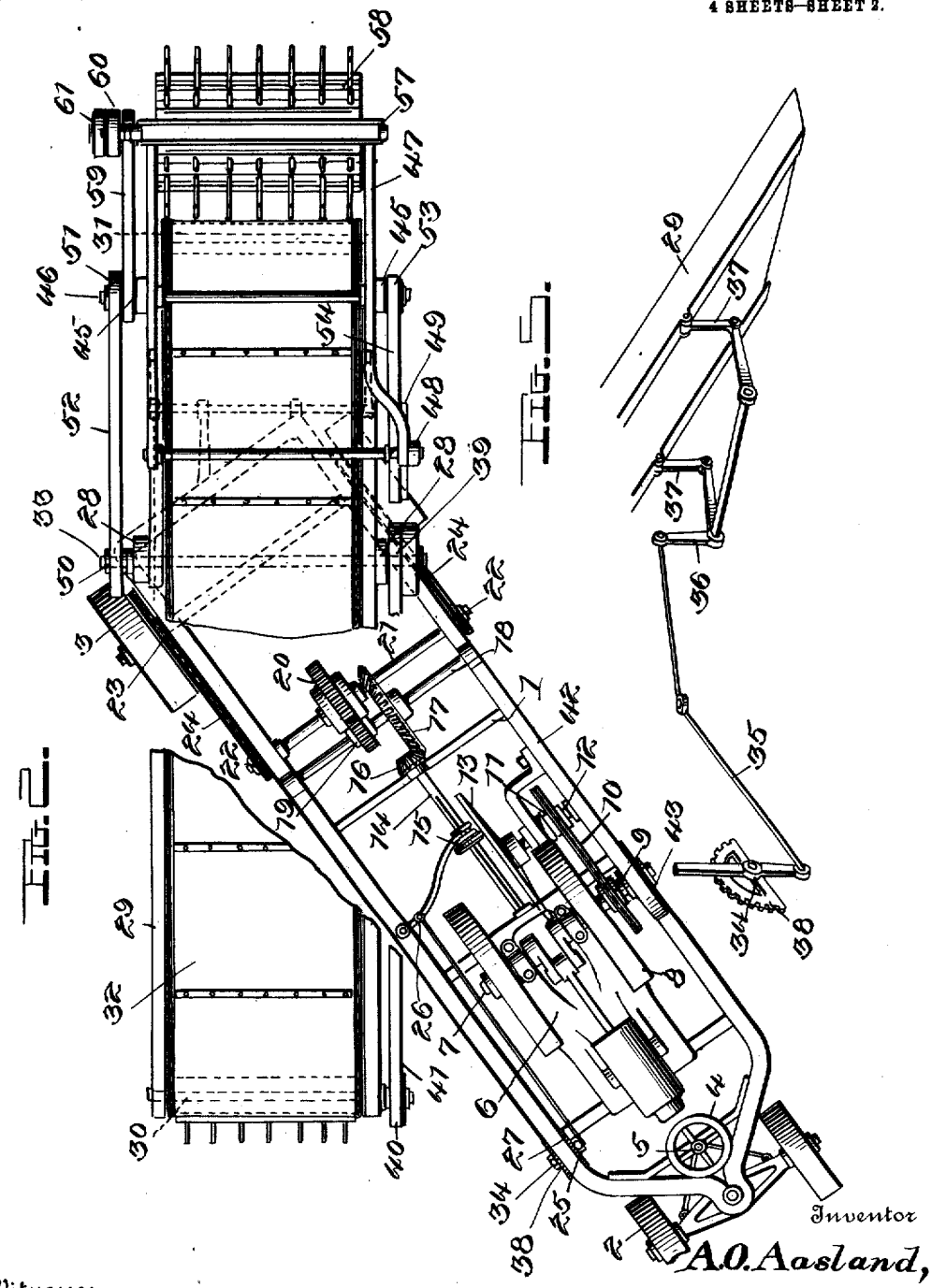


FIG. 2.

FIG. 5.

Witnesses

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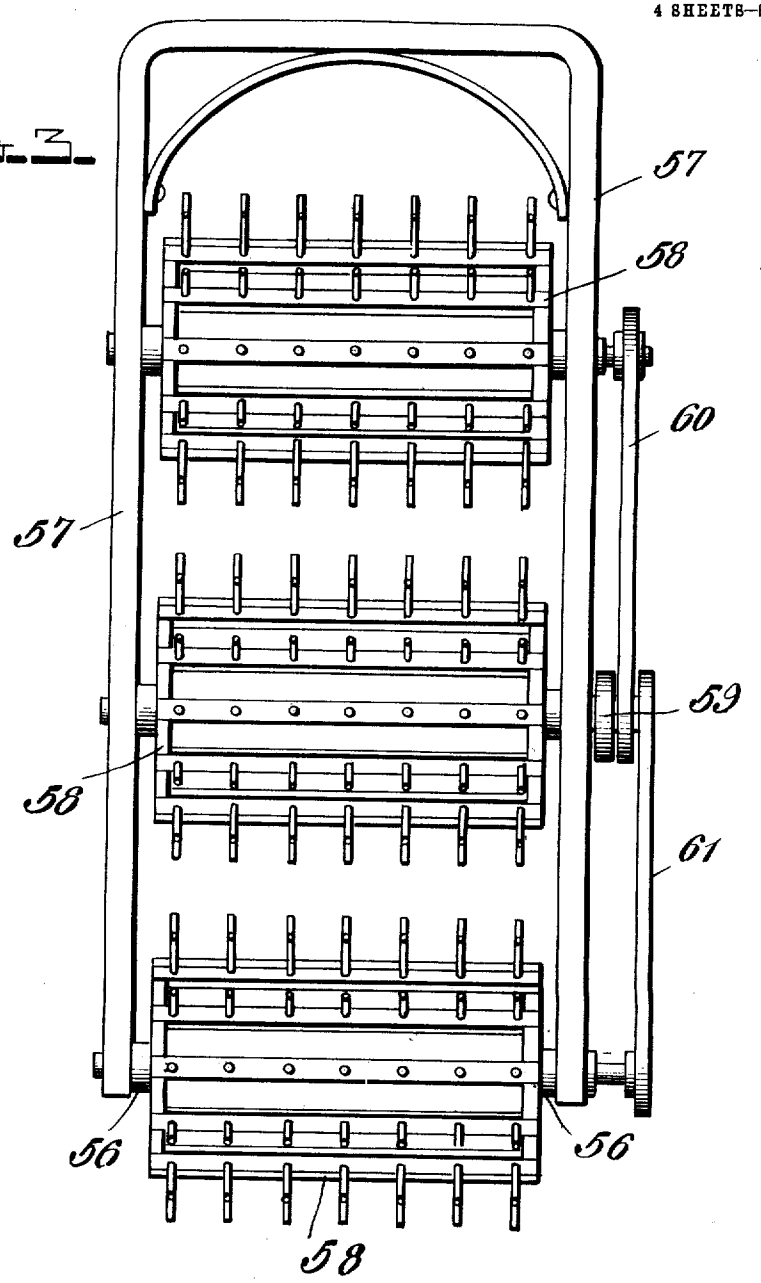
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4 SHEETS—SHEET 3.

Fig. 3.



Witnesses

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MANURE LOADER.

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4 SHEETS-SHEET 4.

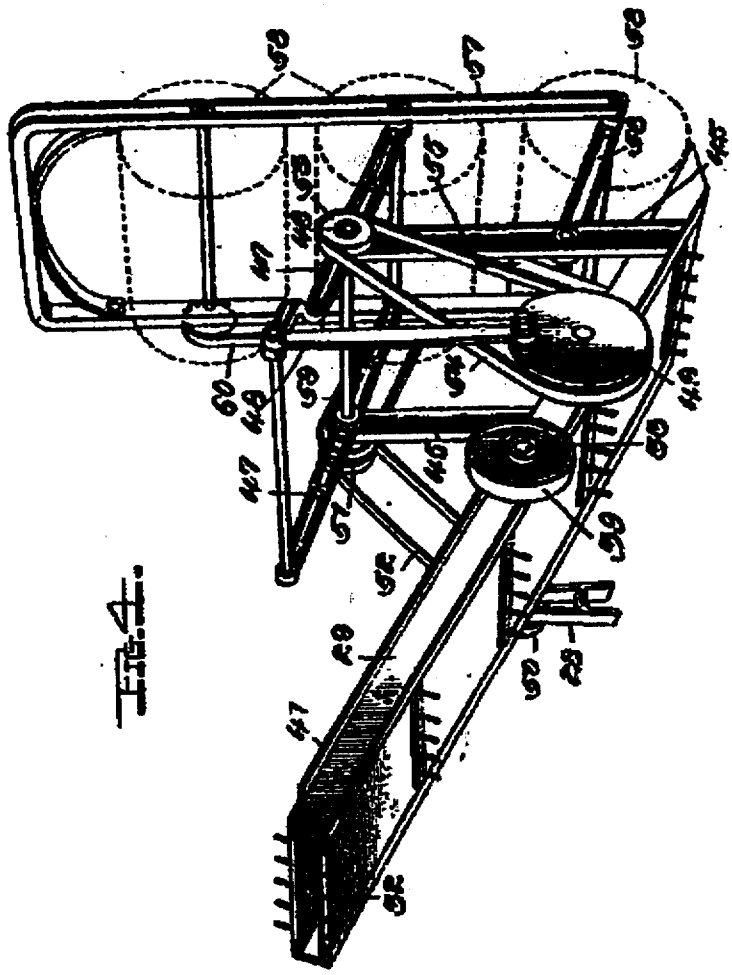


Fig. 4.

Witnesses

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UNITED STATES PATENT OFFICE.

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MANURE-LOADER.

1,004,616. Specification of Letters Patent. Patented Oct. 3, 1911.

Application filed June 24, 1911. Serial No. 635,126.

To all whom it may concern:

Be it known that I, ALFRED O. AASLAND, a citizen of the United States, residing at Halstad, in the county of Norman and State of Minnesota, have invented certain new and useful Improvements in Manure-Loaders, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to new and useful improvements in the class of devices known as loading and unloading and more particularly to a manure loader, and my object is to provide a device of this character having a plurality of drums or the like capable of reciprocating movement.

A further object of the invention resides in providing an elevator carried out of alinement with the frame or truck of the machine, and a further object of the invention resides in providing means supported on the elevator for the reciprocation of the feeding drums.

A further object of the invention is to provide a rocking beam supported by the elevator and indirectly operated through the operation of said elevator to reciprocate the drums.

A still further object resides in providing a plurality of drums disposed in vertical alinement.

With these and other objects in view, my invention consists in the novel features of construction, combination and arrangement of parts as will be hereinafter referred to and more particularly pointed out in the specification and claims.

In the accompanying drawings forming a part of this application, Figure 1 is a side elevation of the device. Fig. 2 is a top plan view thereof with parts broken away. Fig. 3 is an end elevation thereof. Fig. 4 is a detail perspective of the elevator and means for reciprocating the drums, and, Fig. 5 is a similar view of the operating means for raising and lowering the elevator.

In carrying out my invention, I shall refer to the drawings in which similar reference characters designate corresponding parts throughout the several views and in which—

1 indicates a frame mounted upon the front and rear wheels 2 and 3, respectively, said front wheels being steered by means of a wheel 4 carried on a shaft 5 having the usual or any preferred connection with the axle of said front wheels. Mounted on said frame, is an engine 6 of any preferred type, the crank shaft 7 of which has mounted thereon, a fly wheel 8 and a sprocket or the like 9, and extending over said sprocket, is a chain 10 which also extends over an additional sprocket 11 carried on a shaft 12. This shaft 12 is rotatably mounted on the frame 1 below the crank shaft of the engine and has also mounted thereon, the friction disk 13, and rotatably mounted in bearings on the frame 1 at substantially right angles to the shaft 12, is an additional shaft 14, upon which is slidably mounted a friction cone or disk 15. One end of the shaft 14 has rigidly mounted thereon, a bevel gear 16 which meshes with a similar but larger gear 17 carried on a shaft 18, said latter shaft being rotatably mounted transversely on the frame and also carried on the shaft 18, is a spur pinion 19 which meshes with a spur gear 20 carried by an additional shaft 21.

The last referred to shaft 21 is provided with the usual or any preferred form of differential gearing and carries adjacent the ends thereof, a pair of sprockets 22 which connect with similar sprockets 23 on the rear drive wheels 3 by means of the chains 24. Thus, when the engine is started to rotate the friction disk 13, and the cone 15 is in engagement with said disk, the various gears may be rotated to rotate the rear wheels of the vehicle, whereby said vehicle may be propelled. I have provided means, however, for the changing of the speed in the propulsion of the vehicle, and to this extent, a lever 25 is pivotally mounted on the frame 1 and has connection with the slidable cone 15 by means of a rod or the like 26. As the lever is moved to dispose said cone near the axial center of the disk 13, the speed of the vehicle will be lessened, while when the same is disposed so as to position the cone adjacent the outer periphery of said disk, the speed of the vehicle will be increased, and in order to provide means for the retention of the cone 15 in its various adjusted positions, the rack 27 is provided and is adapted to receive a detent or the like carried by said lever.

Mounted on the rear end of the frame 1, is a pair of standards 28, between which is pivotally mounted an elevator frame 29, said frame being provided on its upper and lower ends with the rollers 30 and 31, respectively, over which extends an endless

elevator 32. As stated, the frame 29 is mounted between the standards 28 and is pivotally carried on a shaft 33, and in order to dispose said elevator in various positions with respect to the ground, a lever 34 is pivotally mounted on the frame 1. A rod or bar 35 having pivotal connection with the lever 34 extends rearwardly to the rear end of the frame 1 and has connection with a bell crank or the like 36, said bell crank in turn having pivotal connection with the frame 29 by means of an arm 37, whereby with the disposal of the lever 34 in various positions, said frame may be likewise moved, and in order to retain the same in its adjusted positions, the rack 38 is provided in connection with the lever 34.

Mounted on one end of the shaft 33, is a double pulley 39, which has connection with a similar pulley 40 carried on the end of the shaft carrying the roller 30, by means of a belt 41, and the pulley 39 is rotated by means of a belt 42 extending from a pulley 43 carried on the crank shaft 7. This belt 42, however, does not extend directly from the pulley 43 to the pulley 39, as the elevator frame is not disposed in alinement with the frame 1 of the vehicle, and in this connection, a pair of pulleys 44 is provided immediately below the pulley 39 over which the reaches of the belt extend. In this manner, the elevator 32 may be operated by the same means which is used for the propulsion of the machine, and in order to stop the operation of the elevator when the machine is being propelled, a clutch mechanism (not shown) may be provided on the crank shaft in connection with the pulley 43.

Secured to the lower end of the elevator frame 29, is a pair of standards 45, between which is rotatably mounted a shaft 46, and loosely mounted on the shaft 46, is a double rocking beam 47, one end of which is connected by means of the pitman 48 to a crank 49 which is rotatably carried on one side of the elevator frame 29. The shaft 33 has also mounted thereon on the side opposite that carrying the pulley 39, an additional pulley 50 which is connected with a pulley 51, carried on the shaft 46, by means of a belt 52, and the shaft 46 is also provided with an additional pulley 53 which connects with the crank 49 by means of a belt 54. From this construction, it will be seen that as the shaft 33 is rotated to operate the elevator 32, the rocking beam 47 is adapted to be oscillated.

The standards 45 are supported in position by means of the braces 55, and pivotally mounted between the free ends of the double rocking beam 47 and a pair of pivotally mounted arms 56, is a frame 57, said frame being provided with a plurality of rotatably mounted drums 58, preferably three in number. One of these drums has the shaft thereof connected to the shaft 46 by means of a belt 59, and said drum shaft is also connected with the shafts of the other drums by means of the belts 60 and 61, respectively, whereby it will be seen that as the shaft 46 is rotated to rock the beam 47, said drums 58 will likewise be rotated. The plurality of drums 58 is preferably disposed in vertical alinement, so that when the device is adapted for use in connection with a large pile of manure, said pile may be quickly and readily loaded upon the elevator by means of the rotating drums, and in view of the reciprocation of said drums as the same are being rotated, the pile will be reduced without the usual cavities being formed therein, as is true in the use of machines carrying only one drum.

Although I have stated that a plurality of drums is preferable for the loading of the manure upon the elevator, it will be readily understood that a cheaper construction may be provided, if desired, such as an elevator carrying picker teeth or the like, but in such a construction as this latter, it will be understood that the elevator must be disposed substantially vertical so as to adhere to the principle of the invention.

In operation, it will be seen that the machine is propelled to a point where a pile of manure is located and is positioned so that the drums in the rear of the device are adapted to engage said pile. With the moving of the friction cone 15 out of engagement with the disk 13 to bring the vehicle to a standstill, the clutch on the crank shaft of the engine is thrown to its effective position so as to start the rotation of the belt 42. The rotation of the belt 42 will cause the operation of the elevator 32 and indirectly rock the beam 47 and rotate the drums 58, the rotation of said drums 58 causing the manure in the pile to be thrown upon the elevator 32, where it is carried to the uppermost point and deposited in any desired manner into a spreader or other vehicle of a like character. The reciprocation of the drum frame while the drums are being rotated, will allow the pile of manure to be reduced quickly and at the same time, remove the complete side pile instead of forming cavities therein, as is usual through the use of a single and stationary drum. When the pile has been totally removed, the rotation of the elevator and drums may be stopped and said elevator raised, whereupon the machine may be propelled to another point.

From the foregoing, it will be seen that I have provided a manure loader in which a plurality of drums is provided, whereby the pile of manure may be removed readily and quickly, and it will further be seen that by providing means whereby the drums are

capable of simultaneous vertical movement, the removal of the manure will be from the complete side or the full height of the pile. It will also be seen that I have provided an improved rocking means for a device of this character which is operated by the same means which propels the vehicle, and furthermore, it will be seen that the reciprocation of the drums is entirely contingent upon the operation of the rocking means. It will still further be seen that the device is of extremely simple construction, thereby cheaply manufactured and one which is extremely useful and effective in operation.

What I claim is:—

1. A manure loader of the class described, comprising a frame, means to propel the same, an elevator carried on said frame, and a plurality of rotating drums carried by the elevator, one above the other.

2. A manure loader, comprising a frame mounted on wheels, an elevator mounted thereon, means for the propulsion of the frame and elevator, a plurality of rotating drums disposed one above the other and supported on said elevator, and means to reciprocate said drums.

3. A manure loader, comprising a frame mounted on wheels, an elevator carried on said frame, means for the propulsion of the frame and the operation of said elevator, a frame carrying a plurality of rotating drums supported on said elevator, and means to vertically reciprocate said frame with the operation of said elevator.

4. A manure loader, comprising a frame, an elevator mounted thereon, means for the operation of said elevator, a plurality of rotating drums disposed one above the other and supported on said elevator, and means contingent on the operation of the elevator for the reciprocation of said drums.

5. In a manure loader, the combination with a frame, an elevator mounted thereon, and means for the operation of said elevator; of a plurality of drums supported on said elevator, means for the conjunctive reciprocation of said drums, and means to rotate said drums, said rotating and reciprocating means being contingent on the operation of said elevator.

6. In a manure loader, the combination with a frame, an elevator carried thereon and means to operate the elevator; of a plurality of drums disposed in vertical alinement, and supported on the elevator, means to rotate the drums, and means to vertically reciprocate the same.

7. In a manure loader of the class described, the combination with a frame, an elevator mounted thereon and means to operate the elevator; of a frame, a plurality of rotating drums carried by the frame and disposed in vertical alinement, a rocking beam supported on the elevator and having pivotal connection with said frame, and means to operate said rocking beam to vertically reciprocate said drums.

8. In a manure loader, the combination with a frame, an elevator mounted thereon and means to operate said elevator; of a rocking beam, means to support the same on the elevator, a frame pivotally mounted to one end of the rocking beam, a plurality of rotating drums carried by said frame, and means coöperating with the opposite end of said rocking beam for the vertical reciprocation of said drum.

9. In a manure loader, the combination with a frame, an elevator mounted thereon and means to operate said elevator; of a rocking beam, means to support the same on the elevator, a frame pivotally mounted to one end of the rocking beam, a plurality of rotating drums carried by said frame, and means contingent upon the operation of the elevator for the operation of said rocking beam.

10. In a manure loader, the combination with a frame, an elevator mounted thereon and means to operate the elevator; of a pair of standards carried by the elevator, a rocking beam pivotally mounted therebetween, a frame pivotally supported at one end of said rocking beam, a plurality of rotating drums carried by the frame and disposed in vertical alinement, means to operate said rocking beam, and additional means to rotate the drums.

11. In a manure loader, the combination with a frame, an elevator mounted thereon and means to operate the elevator; of a pair of standards carried by the elevator, a rocking beam pivotally supported between said standards, a frame pivotally carried on one end of the rocking beam, a plurality of rotating drums carried by the frame and disposed in vertical alinement, a pitman having connection with the opposite end of said rocking beam, a crank carried by the elevator to which said pitman is connected, means to rotate said crank, and additional means to rotate the drums, both of said rotating means being contingent upon the operation of the elevator.

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

ALFRED O. AASLAND.

Witnesses:
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G. O. Benson.