

J. B. SCHUMAN.
MANURE LOADER.

APPLICATION FILED MAY 22, 1906. RENEWED FEB. 8, 1908.

904,457.

Patented Nov. 17, 1908.

2 SHEETS—SHEET 1.

Fig. 1.

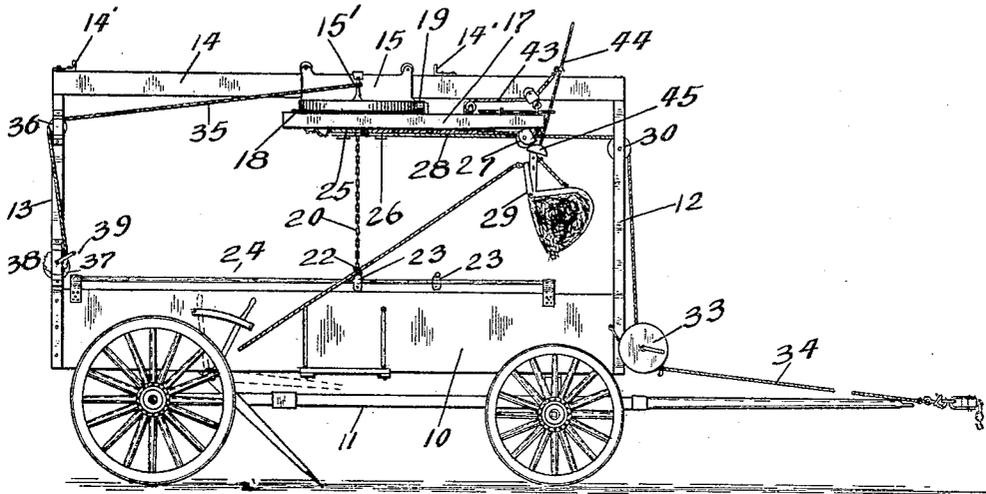
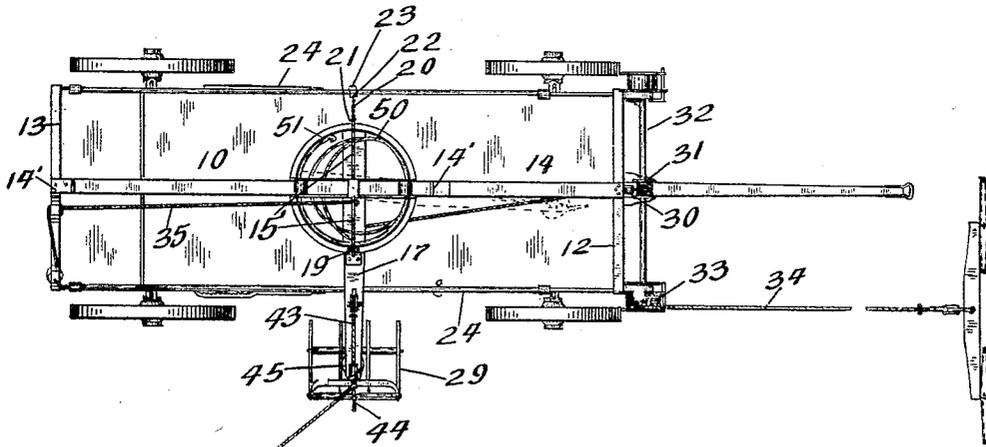


Fig. 2.



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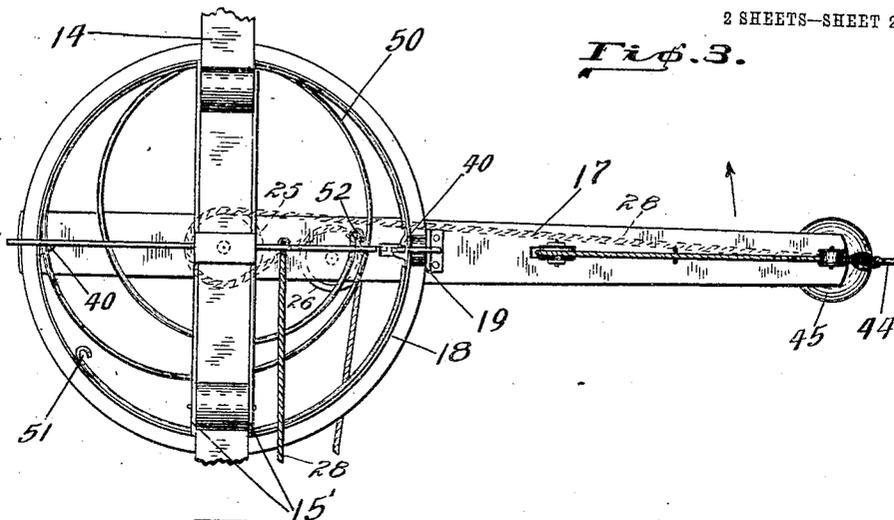


Fig. 3.

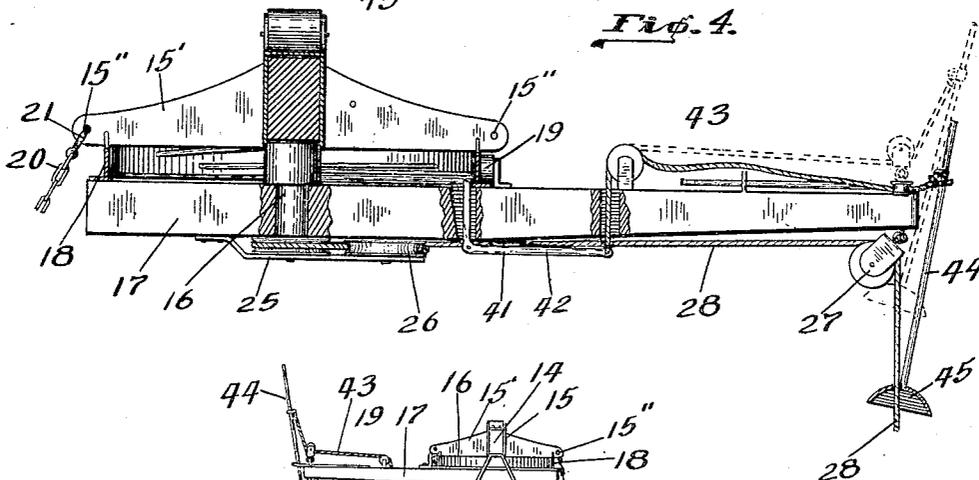


Fig. 4.

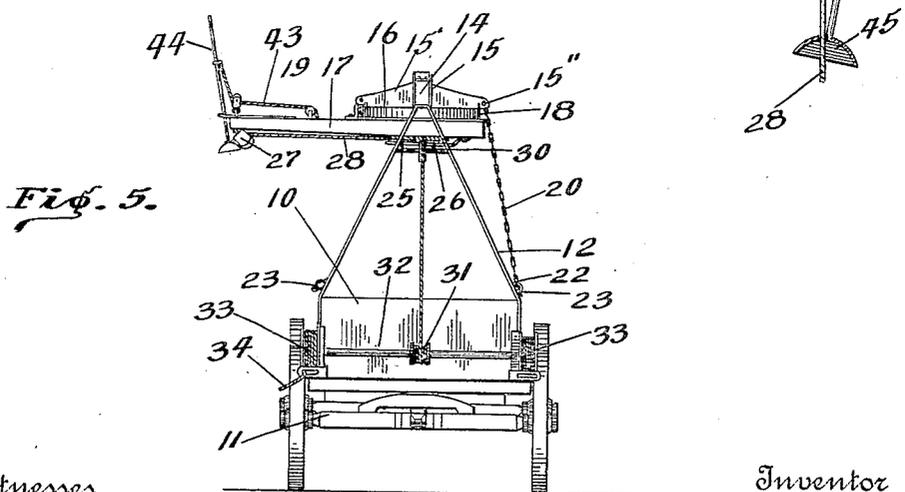


Fig. 5.

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UNITED STATES PATENT OFFICE.

JAMES B. SCHUMAN, OF INDIANAPOLIS, INDIANA, ASSIGNOR TO JAMES B. SCHUMAN AND JOSEPH K. SHARPE, JR., OF INDIANAPOLIS, INDIANA, AND THEOPHILUS KING, OF QUINCY, MASSACHUSETTS, A COPARTNERSHIP.

MANURE-LOADER.

No. 904,457.

Specification of Letters Patent.

Patented Nov. 17, 1908.

Application filed May 22, 1906, Serial No. 318,168. Renewed February 8, 1908. Serial No. 414,983.

To all whom it may concern:

Be it known that I, JAMES B. SCHUMAN, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Manure-Loaders, of which the following is a specification.

The object of my present invention is to produce a mechanism by means of which manure or other material may be readily loaded into a manure spreader or box wagon.

The accompanying drawings illustrate my invention:

Figure 1 is a side elevation; Fig. 2 a plan; Fig. 3 a plan on an enlarged scale of the lifting apparatus; Fig. 4 a partial vertical section of the parts shown in Fig. 3; and Fig. 5 a front elevation.

In the drawings, 10 indicates a box-like bed of the vehicle 11. Detachably secured to the ends of bed 10 are standards 12 and 13 the upper ends of which are connected by a longitudinal beam 14 which is held at considerable distance above the wagonbed. Mounted upon beam 14 is a carriage 15 upon which the lifting mechanism is supported. The carriage 15 carries on its under side a trunnion 16 upon which is pivoted the cross arm 17. Concentric with the trunnion 16 is an annular track 18 having a horizontal outwardly extending flange adapted to receive a roller 19 carried by cross arm 17 between its pivotal point and its outer end to which the lifting mechanism is attached. The inner end of arm 17 extends beyond the pivot sufficiently to lie beneath the annular track 18. Carriage 15 consists in part of a pair of oppositely extending brace arms 15' to which the annular track is secured, and in order to counteract any weight suspended from the outer cross arm 17 I provide a chain 20 having the hook 21 adapted to be inserted in a perforation 15'' formed in the outer end of each arm 15'. The opposite end of the chain 20 is provided with a hook 22 adapted to be connected to either one of a pair of pulley blocks 23, one of which is arranged at each side of the wagon bed on a rod 24, the arrangement being such that the pulley block 23 to which the chain may be attached, will slide along its rod 24 when the

carriage 15 is moved longitudinally of the beam 14. Journaled on the trunnion 16 below the cross arm 17 is a pulley 25, and journaled on the under side of arm 17 between the pulley 25 and the outer end of the cross arm is an idler 26. Hung from the outer end of cross arm 17 is a pulley block 27. The lifting cable 28 is provided at its outer end with any suitable lifting device 29 and passes from thence up over pulley block 27 around wheel 25 and behind wheel 26 and from thence forward over an idler 30 to a winding drum 31 carried by a shaft 32 journaled in suitable bearings on the front end of the wagon bed 10. Shaft 32 is provided with a large drum 33 upon which is wound a cable 34 to which a suitable draft animal may be attached. In order to hold the carriage 15 at any desired point on the beam 14, against the pull exerted upon cable 28, I attach to said carriage a cable 35 which passes from thence to the rear of the vehicle over an idler 36 and from thence to a drum 37 provided with a pawl-held ratchet 38 and a crank 39. Suitable stops 34' may be arranged upon beam 14 to limit the movement of carriage 15 thereon.

In order to hold the cross arm 17 transversely extended during a lifting operation I provide a catch 40 on opposite sides of the track 18 either of which catches may be engaged by a latch 41 mounted on the cross arm 17 said latch 41 being yieldingly urged toward holding position by spring 42. Attached to one arm of latch 41 is a rope 43 which passes over suitable idlers on the cross arm 17 with its upward end attached to a rod 44 provided at its lower end with a perforated head 45 through which the cable 28 passes, the arrangement being such that when the lifting device 29 is lifted to engage with head 45 rope 43 will thereby be caused to pull upon latch 41 and withdraw same from catch 40 with which it is in engagement, so that a continued pull upon cable 28 will, because of the arrangement of wheel 26, pull the cross arm 17 around to a position substantially parallel with the wagon bed 10 so as to bring the lifting device 29 over the wagon bed and permit the discharge of its load thereinto.

In order to conveniently return the cross arm to lifting position I mount within the annulus 18 a spring coil 50 each end of which is provided with a hook 51 adapted to hook over a pin 52 carried by cross arm 17, the arrangement being such that the cross arm 17 will be normally urged to transversely extended position (to one or the other side, depending upon the end of the coil which may be connected thereto). Coil 50 will of course be attached to the carriage 15 at medial point.

I claim as my invention:

1. The combination, with a vehicle, of a longitudinal beam supported above the same, a carriage movably mounted on said beam, means for holding same in desired position on said beam, a cross arm pivotally mounted on said carriage, lifting mechanism carried by said cross arm, means for temporarily holding the cross arm in extended position, and a spring yieldingly urging said cross arm to extended position.

2. The combination, with a vehicle, of a longitudinal track beam supported above the same, a carriage mounted on said track beam, a cross arm pivotally mounted on said carriage, means for temporarily holding said cross arm in transversely extended position, a lifting cable passing upward over a support near the outer end of the cross-arm, thence inward to a support carried by the cross-arm between its pivotal point and its lifting end, and thence longitudinally of the vehicle, and a spring for yieldingly urging the cross arm to transversely extended position.

3. The combination, with a vehicle, of a longitudinal track beam supported above the same, a carriage mounted on said track beam, a cross arm pivotally mounted on said carriage, means for temporarily holding said cross arm in transversely extended position, a lifting cable passing upward over a support near the outer end of the cross-arm, thence inward to a support carried by the cross-arm between its pivotal point and its lifting end, and thence longitudinally of the vehicle, and a coil spring carried by the carriage and provided at each end with means for engaging the cross arm whereby the cross arm may be yieldingly urged to one or the other of its transversely extended positions.

4. The combination, with a vehicle, of a longitudinal track beam supported above the same, a carriage mounted on said track beam, a cross arm pivotally mounted on said carriage, means for temporarily holding said cross arm in transversely extended position, a lifting cable passing upward over a support near the outer end of the cross-arm, thence inward to a support carried by the

cross-arm between its pivotal point and its lifting end, and thence longitudinally of the vehicle, a spring for yieldingly urging the cross arm to transversely extended position, and means associated with the lifting cable for automatically releasing the means for temporarily holding the cross arm in transversely extended position.

5. The combination, with a vehicle, of a longitudinal beam supported above the same, a carriage movably mounted on said beam, means for holding same in desired position on said beam, a cross arm pivotally mounted on said carriage, lifting mechanism carried by said cross arm, means for temporarily holding the cross arm in extended position, a spring yieldingly urging said cross arm to extended position, and means associated with the lifting cable for automatically releasing the means for temporarily holding the cross arm in transversely extended position.

6. The combination, with a vehicle, of a longitudinal track beam supported above the same, a carriage mounted on said track beam, a cross arm pivotally mounted on said carriage, means for temporarily holding said cross arm in transversely extended position, a lifting cable passing upward over a support near the outer end of the cross-arm, thence inward to a support carried by the cross-arm between its pivotal point and its lifting end, and thence longitudinally of the vehicle, a coil spring carried by the carriage and provided at each end with means for engaging the cross arm whereby the cross arm may be yieldingly urged to one or the other of its transversely extended positions, and means associated with the lifting cable for automatically releasing the means for temporarily holding the cross arm in transversely extended position.

7. The combination, with a vehicle, of a carriage support carried by said vehicle, a carriage movably mounted on said support, a swinging load sustaining member associated with said carriage, means for swinging said member longitudinally of the vehicle, and means for automatically returning said member to operative position.

8. The combination, with a vehicle, of a carriage support, a carriage movably mounted upon said support, a swinging load sustaining member associated with said carriage, lifting mechanism carried by said member, means for swinging said member, and means for counteracting the weight suspended from said member in any position with the weight of the vehicle.

9. The combination, with a vehicle, of a carriage support, a carriage movably mounted upon said support, a swinging load sustaining member associated with said car-

- riage, lifting mechanism carried by said member, means for swinging said member transversely of the vehicle, and means movable with said carriage for counteracting the weight suspended from said member with the weight of the vehicle.
10. The combination, with a vehicle, of a carriage support, a carriage thereon, a load sustaining member connected with said carriage, lifting mechanism carried by said member, and a guy connected to said carriage and movably connected to said vehicle for counteracting the weight carried by said member.
11. The combination, with a vehicle, of a carriage support, a carriage movably mounted thereon, a swinging load sustaining member associated with said carriage a lifting cable connected with said member and with winding mechanism at one end of said support whereby said carriage with its load is moved in one direction, and means for holding said carriage in a desired position against the pull of said cable.
12. The combination, with a vehicle, of a carriage support, a carriage movably mounted thereon, a swinging load sustaining member associated with said carriage, a lifting cable connected with said member and communicating with winding mechanism at one end of said support whereby said carriage is moved in one direction, and a cable connected with said carriage and communicating with winding mechanism at the opposite end of said support whereby the movement of said carriage may be reversed or stopped.
13. The combination, with a vehicle, of a carriage support, a carriage mounted thereon, a load sustaining member pivotally connected to said carriage to be transversely or longitudinally swung in relation to the vehicle, lifting mechanism on said member, means for temporarily securing said member in transverse position, means for releasing said securing means and permitting said member to be swung longitudinally of the vehicle, and means for automatically returning said member to transverse position.
14. The combination, with a vehicle, of a carriage support, a carriage movably mounted thereon, a turn-table connected with said carriage, a swinging member pivotally connected with said carriage, a roller mounted on said member and engaging said turn-table, means for swinging said member in one direction, and means for automatically swinging said member in a reverse direction.
15. The combination, with a vehicle, of a carriage movably mounted thereon, a turn-table connected with said carriage, a swinging member pivotally connected with said carriage a roller mounted on said member and engaging said turn-table, a cable for swinging said member in one direction, and yielding means for automatically swinging said cable in an opposite direction.
16. The combination, with a vehicle, of a carriage support, a carriage mounted thereon, a circular track mounted on said carriage, a swinging member pivotally mounted on said carriage, and a roller on said member engaging said track whereby said member may be revolved about said track.
17. The combination, with a vehicle, of a carriage support, a carriage mounted thereon, a turn-table mounted on said carriage, a swinging member pivotally mounted on said carriage and engaging said turn-table, means for moving said member about said turn-table, means for stopping the movement thereof, and means for releasing said stopping means.
18. In a manure loader, the combination, with the carriage support, of a carriage, a turn-table supported thereby, a cross-arm pivotally supported by said carriage, means connecting said arm and turn-table whereby said arm may be swung about said turn-table, a pulley mounted coincidently with the pivotal connection of said cross-arm, and a cable for rotating said pulley and thus swing said cross-arm to different positions about the turn-table.
19. In a manure loader, the combination with the carriage support, of a carriage, a turn-table supported thereby, a cross-arm pivotally supported by said carriage, means connecting said arm and turn-table whereby said arm may be swung about said turn-table, an automatic locking device engaging said turn-table and said arm to prevent movement of the latter, and means for automatically releasing said device.
20. In a manure loader, the combination, with the carriage support, of a carriage, a turn-table supported thereby, a cross-arm pivotally supported by said carriage, movable means connecting said arm and said turn-table, a latch engaging said arm and turn-table, flexible means for disengaging said latch, a pulley mounted coincidently with the pivotal connection of said cross-arm and carriage, a cable about said pulley, and means for operating said cable to rotate said pulley and thus swing said cross-arm to different positions.
21. The combination, in a manure loader, of a supporting structure, a carriage mounted thereon, a swinging cross-arm supported by said carriage, a pulley on said arm, an idler on said arm, a cable communicating with a load lifting device and passing about said pulley and guided by said idler and thence passing to a winding drum to be operated, and said drum.
22. The combination, with a vehicle, of a

carriage support, a carriage thereon, a swinging cross-arm supported by said carriage, means for swinging said arm longitudinally of the vehicle, means for swinging said arm transversely of the vehicle, means for reversing or stopping the movement of said arm, and means for counteracting the weight suspended from said cross-arm.

In witness whereof, I, have hereunto set my hand and seal at Indianapolis, Indiana, 10 this 9th day of May, A. D. one thousand nine hundred and six.

JAMES B. SCHUMAN. [L. s.]

Witnesses:

THOMAS W. McMEANS,
ARTHUR M. HOOD.