

A. D. MARCH.
WAGON LOADER.

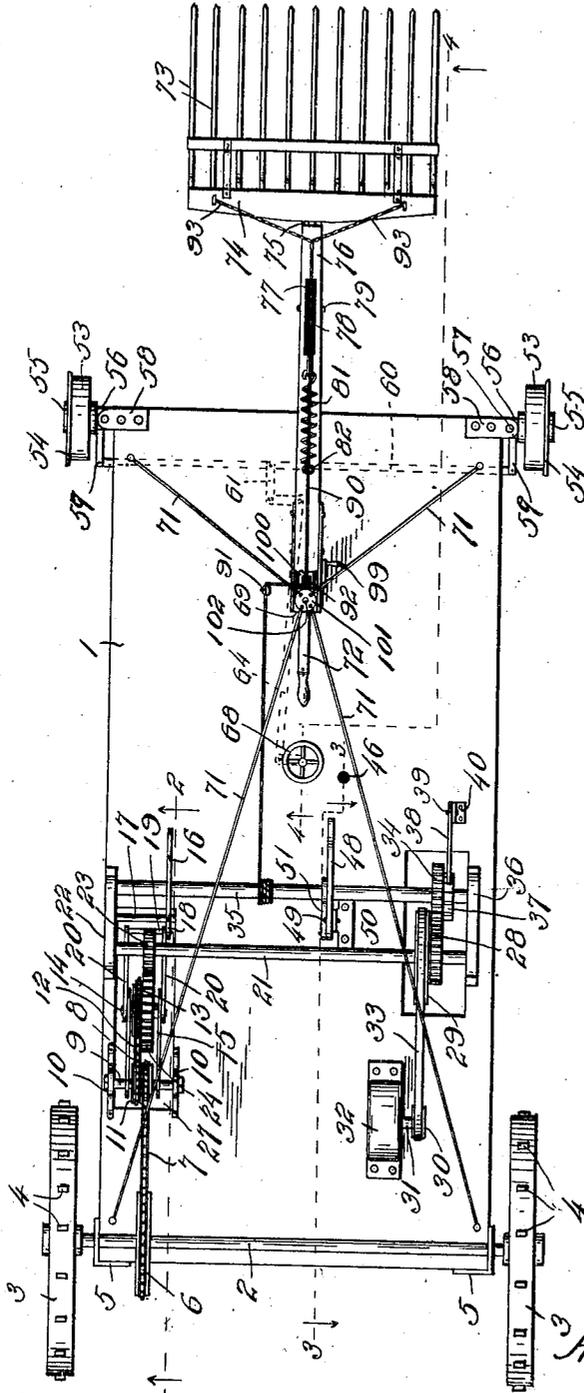
APPLICATION FILED FEB. 26, 1908. RENEWED MAY 12, 1909.

925,364.

Patented June 15, 1909.

3 SHEETS—SHEET 1.

FIG. 1.



Witnesses
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3 SHEETS—SHEET 2.

Fig. 2.

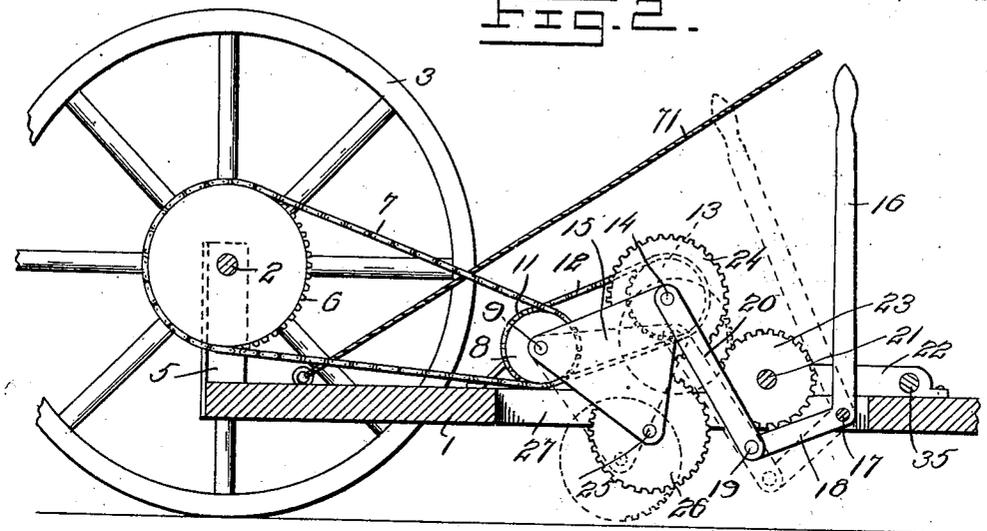
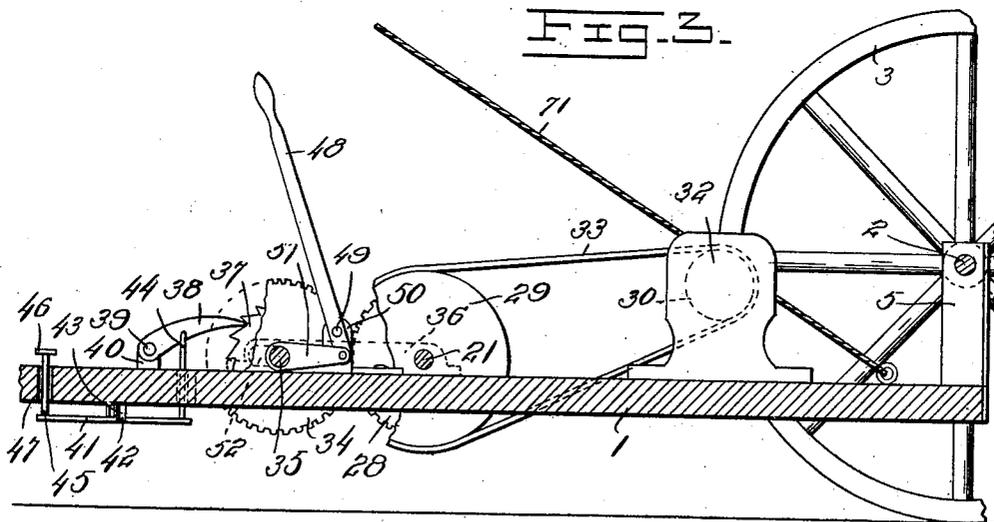


Fig. 3.



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3 SHEETS—SHEET 3.

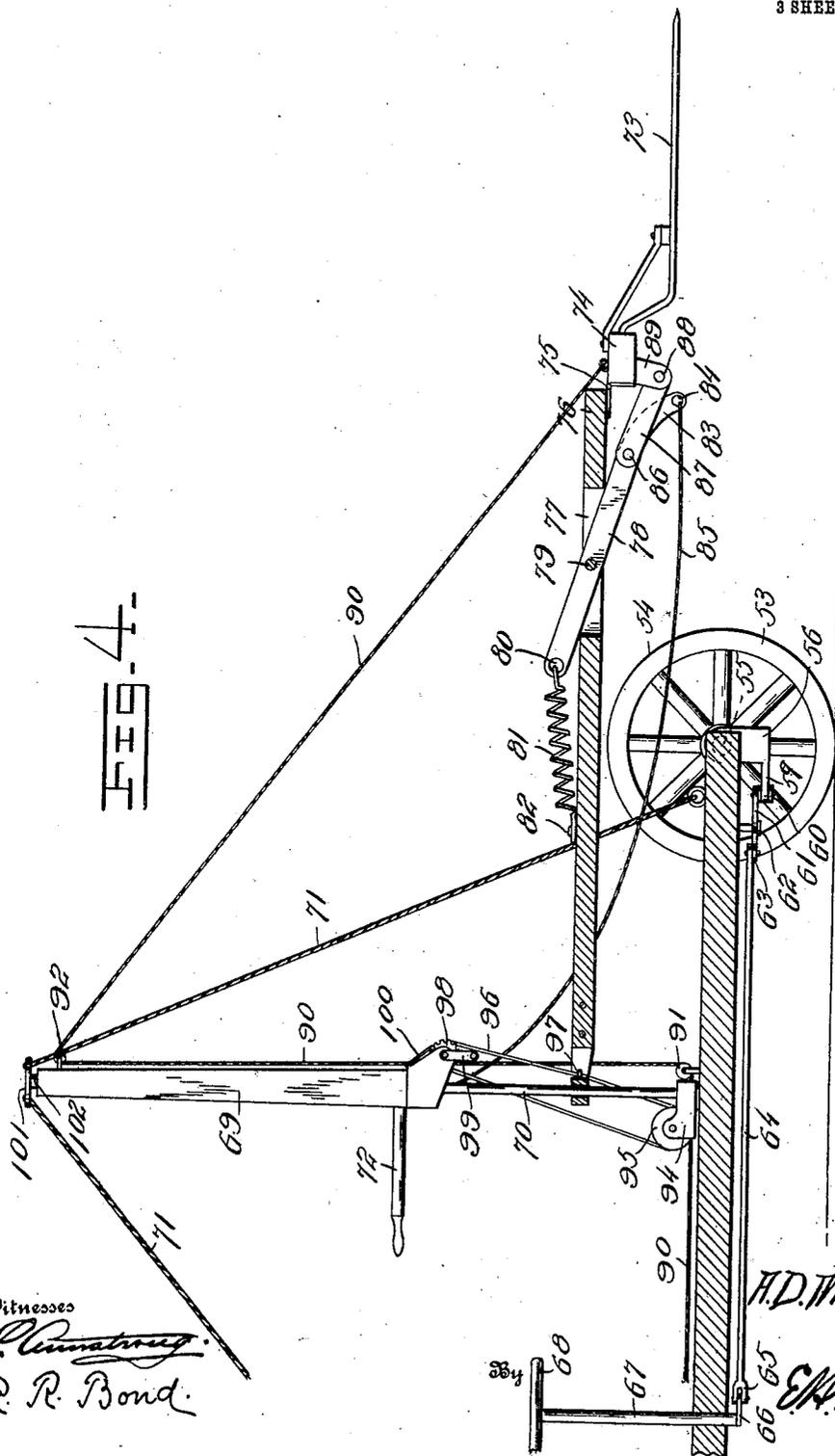


FIG. 4.

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UNITED STATES PATENT OFFICE.

ALBERT D. MARCH, OF LOGANSFORT, INDIANA.

WAGON-LOADER.

No. 925,364.

Specification of Letters Patent.

Patented June 15, 1909.

Application filed February 26, 1908, Serial No. 417,949. Renewed May 12, 1909. Serial No. 495,565.

To all whom it may concern:

Be it known that I, ALBERT D. MARCH, a citizen of the United States of America, and resident of Logansport, in the county of Cass and State of Indiana, have invented certain new and useful Improvements in Wagon-Loaders, of which the following is a specification.

This invention relates to certain new and useful improvements in devices for loading hay, manure, gravel or other substances or material onto a wagon or other conveyance by portable means, and it has for its objects among others to provide a simple, cheap yet durable and efficient machine for this purpose which can be easily manipulated and governed and by which the material can be readily deposited to either side as may be desired.

It has for a further object to provide an efficient automatic farm derrick or loading device having a gasolene or other motor for operating the main shaft and for running the apparatus forward or backward. Means are provided for steering the machine, also means to prevent it slipping or moving side-wise.

Other objects and advantages of the invention will hereinafter appear and the novel features thereof will be particularly pointed out in the appended claims.

The invention is clearly illustrated in the accompanying drawings which, with the numerals of reference marked thereon, form a part of this specification and in which—

Figure 1 is a top plan of a machine constructed in accordance with my invention. Fig. 2 is a longitudinal section, on an enlarged scale, on the line 2—2 of Fig. 1 looking in the direction of the arrows. Fig. 3 is a longitudinal section, on an enlarged scale, on the line 3—3 of Fig. 1 looking in the direction of the arrows. Fig. 4 is a longitudinal section, on an enlarged scale, on the line 4—4 of Fig. 1 looking in the direction of the arrows.

Like numerals of reference indicate corresponding parts throughout the several views.

Referring to the drawings 1 designates a platform which may be of any required width and length, being of sufficient dimensions to prevent upsetting of the machine.

2 is the rear axle and 3 the wheels thereon, said wheels having lugs or the like 4 to prevent slipping, as seen clearly in Fig. 1. This axle is mounted in suitable bearings in the angular plates 5 rising from the rear corners of the platform, as seen clearly in Figs. 1 and 2, and on this axle is a sprocket wheel 6 around which passes a chain 7 which in turn passes over a sprocket wheel 8 on a shaft 9 mounted in suitable bearings 10 on the platform. On the shaft 9 is another sprocket wheel 11 around which passes a sprocket chain 12 which passes also around a sprocket wheel 13 on a shaft 14. This shaft 14 is mounted in bearings in the triangular plates 15 which are pivotally mounted on the shaft 9, as seen in Fig. 2, said plates being designed to be moved on their pivot by means of a suitable bell crank lever 16 fulcrumed at its angle, as at 17, its longer arm being fashioned into a handle, and its shorter arm 18 being pivotally connected, as at 19, with a link 20 which is pivotally connected with the shaft 14, all as seen clearly in Fig. 2, it being understood that the links are duplicated, there being one on each side of the triangular plates, as shown clearly in Fig. 1. By this means the plates may be moved from their full line position seen in Fig. 2 to their dotted line position in the same figure by moving the lever from the full line to the dotted line position.

On the shaft 21 journaled in suitable bearings 22 at opposite sides of the machine is a gear wheel 23. This shaft 21 as the main shaft which is designed to be revolving at all times when the engine, or motor, soon to be described, is running. With this gear wheel there meshes a gear wheel 24 carried by the shaft 14 for running the machine in one direction, while mounted on a shaft 25 at the bottom angle of the triangular plates 15 is a gear wheel 26 adapted to mesh with the gear wheel 22 by throwing the lever 16 forward, for running the machine in the opposite direction. It is evident that in lieu of the gear wheels 23, 24 and 26 friction wheels may be employed if preferred. The operation, however, is substantially the same. Any suitable speed reducing means may be employed as may be

found most expedient. The platform is provided with a suitable opening 27, as seen in Figs. 1 and 2, through which the triangular plates, the lowermost gear and a portion of the bell crank and links project, as seen best in Fig. 2.

On the main driving shaft 21 is a gear wheel 28 and a belt pulley 29, the latter being connected with a belt pulley 30 on the shaft 31 of a gasoline or other motor 32 by means of a belt 33 whereby the main driving shaft 21 is designed to run at all times when the motor is running. Meshing with the gear 28 is a gear 34 on the shaft 35 parallel with the shaft 21 and mounted in suitable bearings 36. On this shaft 35 is a ratchet wheel 37 with which engages the pawl 38 pivotally mounted at 39 on a suitable bracket 40, as seen best in Fig. 3. 41 is a bar pivotally mounted at 42 in suitable brackets or lugs or ears 43 depending from the underside of the platform, as seen best in Fig. 3. One end of this bar is connected with the upright link 44 with the pawl 38 near its center, while rising from the other end of said bar is a rod 45 having a head or foot piece 46, said rod being loosely slidable through an opening 47 in the platform. The link 44 also moves through an opening in the said platform, as shown by dotted lines in Fig. 3.

48 is a lever fulcrumed at 49 on a suitable bracket or support 50 rising from the platform 1 and connected by link 51 with the shaft 35, the end of which adjacent the gear 37 is mounted to slide in its bearing, as indicated by dotted lines at 52 in Fig. 3, so that the gear wheel 34 may be moved into or out of engagement with the gear wheel 28, as will be readily understood from said Fig. 3, and the object of which will soon be made apparent.

The machine is supported at its forward ends upon the wheels 53 which are provided with flanges 54 to keep them from moving sidewise and these wheels are mounted upon stub axles 55 which are carried by the blocks 56 which are swiveled, as at 57, in the bracket or castings 58 secured to the front corners of the platform. These blocks 56 have the horizontal extensions 59 which are pivotally connected by transverse bar 60, pivotally connected with which is the link 61 pivoted at 62 and pivotally connected, as at 63, with the longitudinal rod 64 the rear end of which is pivotally connected, as at 65, with the crank arm 66 on the lower end of the steering bar 67 which is provided with the hand wheel or crank, or the like, 68, turning of which simultaneously turns the steering wheels in one direction or the other.

69 is the upright or main pole. It is supported on the metallic support 70 which is swiveled in the table at its lower end so as to turn freely, and is braced by suitable guy

ropes or wires 71, as seen clearly in Figs. 1 and 4. It is provided with a suitable handle or lever 72 for turning the upright or post on its pivot to shift the position of the fork.

The fork 73 may be of any suitable construction and capable of lifting any desired weight or bulk. Its cross bar 74 is hinged, as at 75, to the forward end of the arm 76 which is provided with an opening 77 through which passes the trigger 78 pivotally mounted, as at 79, within said opening and to its upper end is connected, as at 80, a spring 81 secured in any suitable manner, as at 82, to the arm 76, as seen clearly in Fig. 4. The forward end of the trigger 78 is curved downwardly, as seen at 83, and is provided with an opening 84 to which is connected the trip rope 85. Pivotally connected with the trigger 78 near its bend as on a pivot 86 are the arms 87 which are pivotally mounted on a shaft or rod 88 mounted in the arms 89 depending from the cross bar 74 of the fork.

90 is a rope one end of which is connected with and wound upon the shaft 35, and after passing under a guide pulley 91 near the base of the upright or main pole it passes upward over another suitable guide pulley 92 mounted at the upper end of the pole thence in an inclined direction forward where it is branched, as at 93, the branches being secured to the outside tines of the fork.

Mounted upon and designed to turn with the vertical post 70 is a bracket 94 in which is mounted the pulley 95 around which passes a belt 96 which is connected with a block or the like 97 on the arm 76 and which passes around the ratchet wheel 98 operated by a crank 99 and engaged by a pawl 100, as seen best in Fig. 4.

The guy ropes 71 are connected to a suitable disk or the like 101 mounted on the shaft 102 which is mounted to turn freely within the upper end of the post 69 so as to allow the latter to turn without disturbing the guy ropes, as will be readily understood.

With the parts constructed and arranged substantially as described, the operation will be apparent and, briefly stated, is as follows:—The machine is run to the proper position and the fork forced into the manure or other substance to be moved, it being understood that the material may be taken either from a pile or from a load and also that the material may be manure or hay or other substance, and if it is designed to operate upon gravel or earth a suitable implement as a shovel is to be substituted for the fork. The main shaft 21 is running all the time the motor is running. The shaft 35 runs only when the fork is to be raised or lowered. Its rotation is controlled by the lever 48 throwing the gear 34 into or out of mesh with the gear 28. When the pawl 38

is in engagement with the ratchet 37 the gears are held in mesh and the fork is raised by means of the rope 90 being wound upon the shaft 35, and being drawn in the direction of the arrow in Fig. 4, the fork will be raised, it being understood that the fork is pivotally connected with the block or the like 97 so that it may be raised up to any desired inclination. When raised to the desired position the arm 76 carrying the fork may be swung around to either side by means of the lever 72, turning the upright or post 69 and when the load on such form is over the wagon or other receptacle, the manure can be dumped by simply pulling the trip rope 85, and after being dumped the spring 81 brings the parts back to their normal position. By turning the crank 99 the rear end of the arm 76, and consequently the fork, can be raised as may be desired to bring the arm 76 nearer horizontal, making it easier to dump the material on the wagon, or spreader. The pawl 38 engaging the ratchet 37 holds the fork as high as it is raised, and when it is desired to lower the same, a pressure upon the head 46 of the rod 45 moves the arm 41 on its pivot and forces the pawl 38 upward out of engagement with the ratchet and thus lets the fork back to its lower position.

Modifications in detail may be resorted to without departing from the spirit of the invention or sacrificing any of its advantages.

What is claimed as new is:—

1. In a device of the character described, a platform, a swiveled upright, a fork, a slotted fork arm mounted for pivotal and vertical movement on said upright, a trigger mounted in the slot of said arm, and means for raising and lowering the fork.

2. In a device of the character described, a platform, a swiveled upright, a fork, a hinged cross bar carrying said fork, a fork arm carrying said bar and mounted for pivotal and vertical movement on said upright, a pivoted trigger on said arm, means pivotally connected with said trigger and cross bar, means for raising and lowering the fork, and means for automatically returning it to its normal position after being unloaded.

3. In a device of the character described, a platform, a swiveled upright, a fork, a hinged cross bar carrying said fork, a fork arm carrying said bar and mounted for pivotal and vertical movement on said upright, a pivoted trigger on said arm, means pivotally connected with said trigger and cross bar, means for raising and lowering the fork, and means for bodily moving said arm vertically.

4. In a device of the character described, a platform, an upright swiveled thereon, an arm pivotally supported from the upright, a fork carried by the arm, a trip lever pivotally mounted on the arm and having a down-

wardly curved end, pivotal arms connected with the trip lever and pivotally connected with the fork, and a trip rope connected with the curved end of said lever.

5. In a device of the character described, a platform, an upright swiveled thereon, an arm pivotally supported from the upright, a fork carried by the arm, a trip lever pivotally mounted on the arm, pivoted means connected with the trip lever and pivotally connected with the fork, a trip rope connected with one end of said lever, and a spring connecting the other end of said trip lever with said arm.

6. In a device of the character described, a platform, an upright swiveled thereon, an arm pivotally supported from the upright, a fork carried by the arm, a trip lever pivotally mounted on the arm, pivotal means connected with the trip lever and pivotally connected with the fork, a trip rope connected with one end of said lever, a spring connecting the other end of said trip lever with said arm, and means for moving said arm at an angle to the upright.

7. In a device of the character described, a platform, an upright swiveled thereon, an arm pivotally supported from the upright, a fork carried by the arm, a trip lever pivotally mounted on the arm, pivotal means connected with the trip lever and pivotally connected with the fork, a trip rope connected with one end of said lever, a spring connecting the other end of said trip lever with said arm, means for moving said arm at an angle to the upright, and means for moving said arm and fork bodily vertically upon the upright.

8. In a device of the character described, a platform, an upright swiveled thereon, a fork, an arm carrying the same, a trip lever pivotally mounted on said arm, pivoted means connected with the trip lever and pivotally connected with the fork, a trip rope connected with one end of said lever, a spring connecting the other end of said trip lever with said arm, a block mounted for vertical movement on said upright, and a pivotal connection between said block and arm.

9. In a device of the character described, a platform, an upright swiveled thereon, a fork, an arm carrying the same, a trip lever pivotally mounted on said arm, pivoted means connected with the trip lever and pivotally connected with the fork, a trip rope connected with one end of said lever, a spring connecting the other end of said trip lever with said arm, a block mounted for vertical movement on said upright, a pivotal connection between said block and arm, and means mounted on the upright for bodily raising and lowering said arm.

10. In a device of the character described, a platform, a main shaft, an upright swiveled on the platform, a fork, a fork-carrying

arm operatively connected with the main shaft, a trigger pivotally mounted on said arm and pivotally connected with the fork, a trip rope connected with one end of said trigger, a spring connecting the other end of said trigger with the arm, means for operating the main shaft, a gear on said shaft, a shaft parallel with the main shaft and having one end mounted for movement to and from the latter, a gear wheel on said movable end, and means connected with said movable end for moving its gear wheel into and out of mesh with the gear wheel on the main shaft.

11. In a device of the character described, a platform, a main shaft, an upright swiveled on the platform, a fork, a fork-carrying arm operatively connected with the main shaft, a trigger pivotally mounted on said arm and pivotally connected with the fork, a trip rope connected with one end of said trigger, a spring connecting the other end of said trigger with the arm, means for operating the main shaft, a gear on said shaft, a shaft parallel with the main shaft and having one end mounted for movement to and from the latter, a gear wheel on said movable end, means connected with said movable end for moving its gear wheel into and out of mesh with the gear wheel on the main shaft, and means for keeping said gears in mesh.

12. In a device of the character described, a platform, a main shaft, an upright swiveled on the platform, a fork, a fork-carrying arm operatively connected with the main shaft, a trigger pivotally mounted on said arm and pivotally connected with the fork, a trip rope connected with one end of said trigger spring, a spring connecting the other end of said trigger with the arm, means for operating the main shaft, a gear on said shaft, a shaft parallel with the main shaft and having one end mounted for movement to and from the latter, a gear wheel on said movable end, means connected with said movable end for moving its gear wheel into and out of mesh with the gear wheel on the main shaft, means for keeping said gears in mesh, and means for disengaging said means so as to allow the shaft to be moved horizontally away from the main shaft.

13. In a device of the character described, a platform, a main shaft, an upright swiveled on the platform, a fork, a fork-carrying arm operatively connected with the main shaft, a trigger pivotally mounted on said arm and pivotally connected with the fork, a trip rope connected with one end of said trigger, a spring connecting the other end of said trigger with the arm, a rear axle and wheels, a motor and connections with said shaft for driving the same, and a connection between said shaft and the rear axle.

14. In a device of the character described,

a platform, a main shaft, an upright swiveled on the platform, a fork, a fork-carrying arm operatively connected with the main shaft, a trigger pivotally mounted on said arm and pivotally connected with the fork, a trip rope connected with one end of said trigger, a spring connecting with the other end of said trigger with the arm, a rear axle and wheels, a motor and connections with said shaft for driving the same, a connection between said shaft and the rear axle, and means cooperating with said main shaft for reversing the machine.

15. In a device of the character described, a platform, a main shaft, a rear axle and wheels, a motor and connections with said shaft for driving the same, a connection between said shaft and the rear axle, a fork arm, a pivotally mounted fork, means for operating the same from the main shaft, a trigger pivoted on the fork arm, means pivotally connecting the trigger and fork, a trip rope connected with one end of the trigger, and a spring connecting the other end of the trigger with the arm.

16. In a device of the character described, a main shaft, a pivotally mounted fork operatively connected with the main shaft, a trigger pivotally mounted on said arm and pivotally connected with the fork, a trip rope connected with one end of said trigger, a spring connecting the other end of said trigger with the arm, a motor for actuating the main shaft, a connection between said shaft and the rear axle, and a reversing mechanism cooperating with said shaft.

17. In a device of the character described, a main shaft, a motor for actuating the same, a connection between said shaft and the rear axle, a reversing mechanism cooperating with said shaft, a fork, a fork arm, and a fork-operating shaft with means for throwing it into or out of operative relation to the main shaft, a trigger pivoted on the fork arm, means pivotally connecting the trigger and fork, a trip rope connected with one end of the trigger and a spring connecting the other end of the trigger with the arm.

18. In a device of the character described, a main shaft, means for rotating the same, a fork arm, a pivotally mounted fork, means for operating the same from the main shaft, a trigger pivotally mounted on said arm and pivotally connected with the fork, a trip rope connected with one end of said trigger, a spring connecting the other end of said trigger with the arm, the rear axle, a gear thereon, a shaft with a gear, a belt connecting said gears, and a pivotally mounted actuating and reversing mechanism interposed between said shafts.

19. In a device of the character described, the combination with the main shaft and its operating means, and the rear axle and means for operating the same from the main shaft,

of a triangular frame, reversing gears
mounted thereon and a reversing lever and
pivotal connections between the same and
said frame, a fork and a pivotally mounted
5 arm carrying the same, a trigger pivotally
mounted on said arm and pivotally con-
nected with the fork, a trip rope connected
with one end of said trigger, and a spring

connecting the other end of said trigger with
the arm.

Signed by me at Logansport Ind., this
21st day of Feby., 1908.

ALBERT D. MARCH.

Witnesses:

GEO. W. WALTERS,
ELIZABETH HOMBURG.

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