

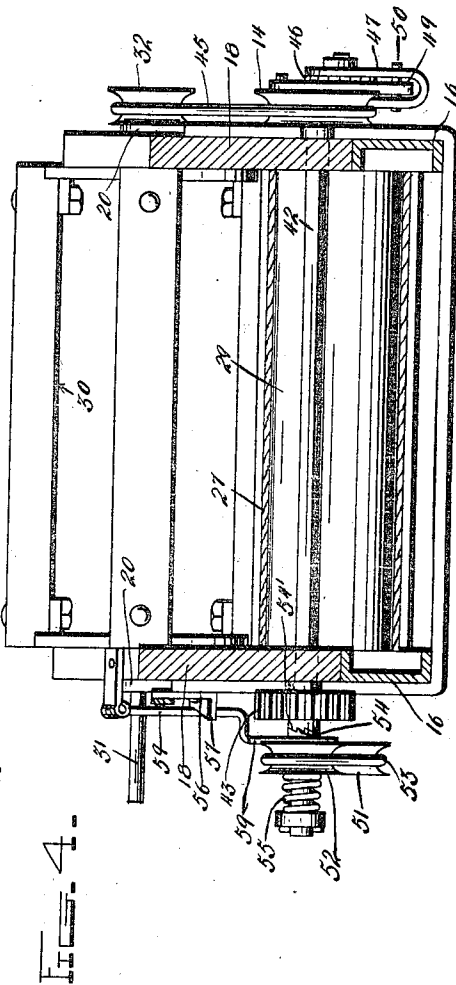
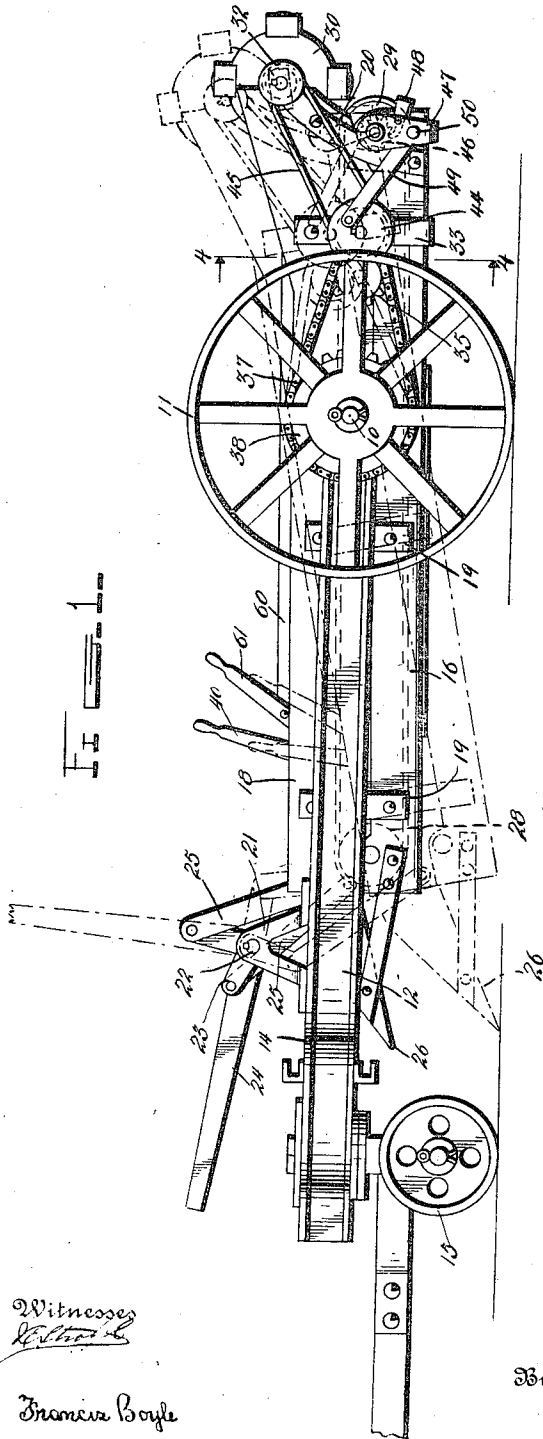
A. E. MOSSBERG.
MANURE SPREADER.

APPLICATION FILED JAN. 24, 1912.

1,046,838.

Patented Dec. 10, 1912.

3 SHEETS—SHEET 1.



Witnesses
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By

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Attorneys

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A. E. Mossberg

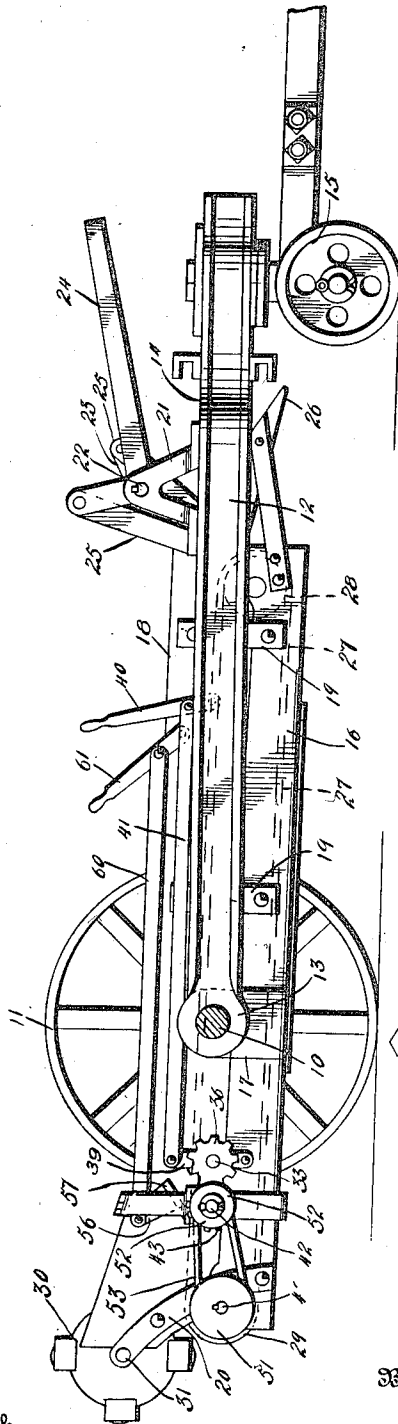
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Fig. 2



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Fig. 3

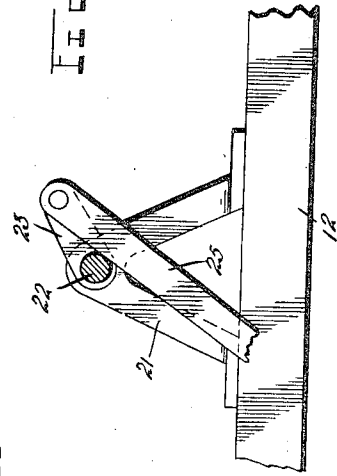
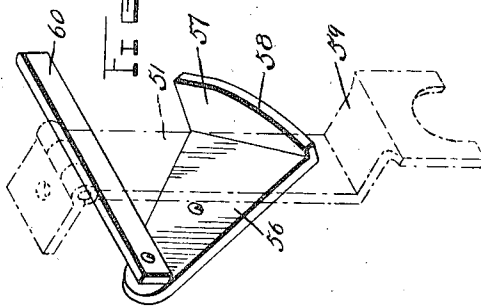


Fig. 4



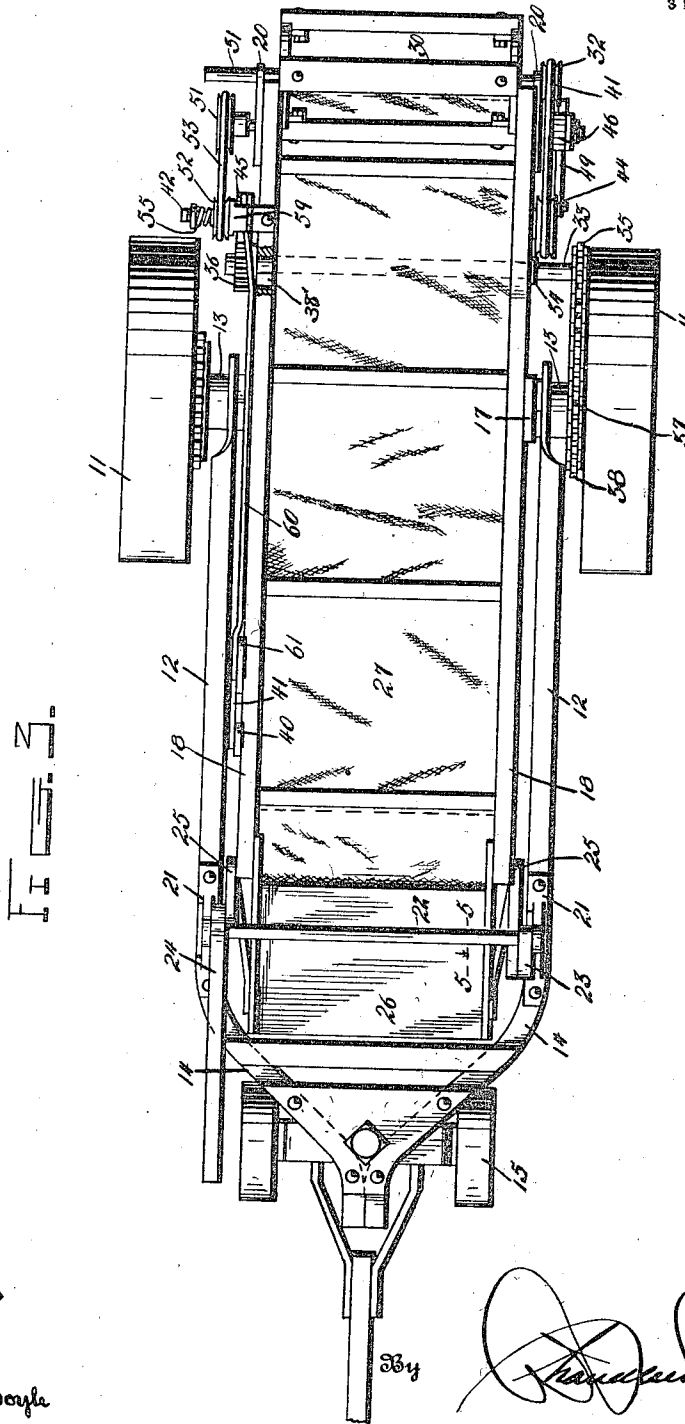
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UNITED STATES PATENT OFFICE.

AXEL E. MOSSBERG, OF WESTPOINT, NEBRASKA.

MANURE-SPREADER.

1,046,838.

Specification of Letters Patent.

Patented Dec. 10, 1912.

Application filed January 24, 1912. Serial No. 673,155.

To all whom it may concern:

Be it known that I, AXEL E. MOSSBERG, a citizen of the United States, residing at Westpoint, in the county of Cuming, State of Nebraska, have invented certain new and useful Improvements in Manure-Spreaders; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to combined manure loaders and spreaders and has for an object to provide a tilting box having novel means at the forward end for adjustably suspending the box from the main frame.

A further object of the invention is to provide a fast drive mechanism for the endless carrier so that the material will be carried from the scoop as fast as taken up by the latter during the loading operation.

A further object of the invention is to provide a novel clutch mechanism for controlling the movement of the endless carrier and spreader cylinder.

With the above objects in view the invention consists of certain novel details of construction and combination of parts herein after fully described and claimed, it being understood that various modifications may be made in the minor details of construction within the scope of the appended claim.

In the accompanying drawings forming part of this specification:—Figure 1 is a side elevation of the device with the box shown depressed in dotted lines. Fig. 2 is a side elevation of the opposite side of the device. Fig. 3 is a plan view of the device. Fig. 4 is a cross sectional view taken on the line 4—4 Fig. 1. Fig. 5 is a cross sectional view on the line 5—5 Fig. 3. Fig. 6 is a detail perspective view of the clutch actuating cam finger.

Referring now to the drawings in which like characters of reference designate similar parts, 10 designates a rear axle which is equipped with ground wheels 11. Spaced channel iron rails 12 are supported at their rear ends upon the axle through the instrumentality of bearing blocks 13, and are bent inwardly at their forward ends as shown at 14, a swiveled fore-truck 15 being secured to the extreme forward end of the rails. The rails form the main frame of the device.

A counter-balanced box is supported upon the rear axle and comprises parallel chan-

nel rails 16 which are suspended from the axle through the instrumentality of hangers 17, box sides 18 being secured to the rails through the instrumentality of straps 19 and 20, the sides being provided with suitable orifices near their rear ends to receive the axle. The box is thus pivotally secured to the axle near the rear end, and by virtue of the endless carrier and spreader cylinder actuating mechanisms being disposed at the rear end of the box this end is so weighted that the forward end of the box tends to rise above the rails of the main frame.

For securing the forward end of the box, pedestals 21 are secured to the channel bars of the main frame and receive a stationary shaft 22, the shaft being equipped near one end with an upstanding loose crank 23 and near the opposite end with a loose bell crank lever 24. Short links 25 are pivotally secured to the bell crank lever and loose link 23 on opposite sides of the shaft, and to the sides of the box rearwardly of the shaft, and suspend the forward end of the box from the shaft. When the bell crank lever grip is elevated the forward end of the box is lowered, and upon release of the bell crank lever the forward end tilts back to normal position, this upward tilting movement being limited by the short link 25 of the loose crank 23 contacting with the shaft as shown.

Secured to the forward ends of the box sides is a scoop 26 which is designed to penetrate and scoop up the material when the forward end of the box is lowered. For conveying the material thus scooped up rearwardly into the box, an endless fabric carrier 27 is trained over rollers 28 and 29 journaled at the forward and rear ends of the box channel rails, the ends of the rear roller shaft extending beyond the rails and being equipped with means for driving the roller as will be presently described. A spreader cylinder 30 is mounted for rotation between the sides at the rear end of the endless carrier, the shaft 31 of the cylinder being equipped at one end with a driving pulley 32.

A driving shaft 33 is journaled in bearings 34 arranged on the box channel rails and is equipped at its opposite end with gears 35 and 36, a sprocket chain 37 being trained over the gear 35 and over a sprocket gear 38 fixed to the adjacent ground wheel.

The bearing on one side of the box is provided with a slot 38' to receive the shaft as shown in Fig. 3.

A shift link 39 is pivoted on one of the box channel rails and is equipped with a central opening to receive the shaft near the gear 36 and is furthermore connected to an operating lever 40 through the instrumentality of a link 41. A driven shaft 42 is journaled in suitable bearings on the channel rails adjacent to the driving shaft and is equipped at one end with a gear 43 which is adapted to mesh with the gear 36 when the shifting link is rocked toward the driven shaft. The driven shaft is equipped at the opposite end with a belt pulley 44 over which and the driving pulley 32 of the spreader cylinder an endless belt 45 is trained. When the operator moves the lever 40 rearwardly the cylinder will be rotated and will discharge the material carried back by the endless carrier.

During unloading the endless carrier is driven slowly, and to attain this end a ratchet wheel 46 is fixed to one end of the rear roller shaft of the endless carrier, and swivelly mounted on the shaft is a rock link 47 carrying a gravity pawl 48, the rock link being actuated through the instrumentality of a pitman 49 carried by the belt pulley 44 of the driven shaft. The pawl operatively engages the ratchet wheel and advances the roller shaft step by step during rotation of the said belt pulley. The pitman is removably connected to the rock link through the instrumentality of a pintle 50.

The pitman is detached during the loading operation to permit of the endless carrier being driven fast as will now be described. The rear roller shaft of the endless carrier is equipped remote from the ratchet wheel with a belt pulley 51 over which and a loose clutch pulley 52 carried by the driven shaft an endless belt 53 is trained. The clutch pulley 52 is equipped with a ratchet face 54 which meshes with a similar ratchet face 54' on the gear 43 car-

ried by the driven shaft, and a spring 55 seated on the driven shaft bears upon the clutch pulley and normally holds the ratchet face of the pulley in engagement with the ratchet face of the gear. When the parts are so engaged the endless carrier will be actuated at a comparatively high rate of speed for loading.

In order to normally hold the clutch faces of the pulley 52 and gear 43 out of engagement, a link 56 is centrally pivoted on the box side above the gear 43 and is bent abruptly outwardly at the lower end to form a cam finger 57 which is equipped with a cam edge 58. A yoke 59 straddles the driven shaft between the clutch pulley 52 and gear 43 and is adapted to ride out upon the beveled cam edge of the cam link and move the loose pulley outward upon the driven shaft against the tension of its spring and disengage the cam face of the pulley from the cam face of the gear. A connecting link 60 is pivotally connected to the upper end of the link 53 and extends forwardly along the box side, being terminally connected to an operating lever 61 through the instrumentality of which the link 53 may be actuated.

What is claimed, is:—

The combination with a dirigible frame, of a counter-balanced box pivoted near the rear end on said frame, and means for adjustably securing the forward end of said box to said frame comprising a shaft carried by said frame, a loose upstanding link on said shaft, a bell crank lever on said shaft, and short links pivotally connected to said loose link and to said bell crank lever on opposite sides of said shaft and pivotally connected to said box in rear of said shaft.

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

AXEL E. MOSSBERG.

Witnesses:

A. L. KRAUSE,

CHARLES BECKENHAUER.