

932,461.

Patented Aug. 31, 1909.
2 SHEETS—SHEET 1.

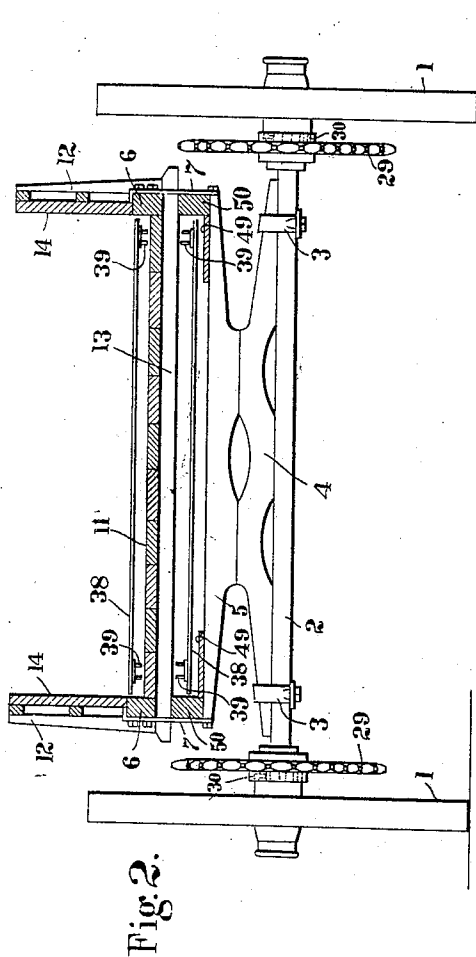


Fig. 2.

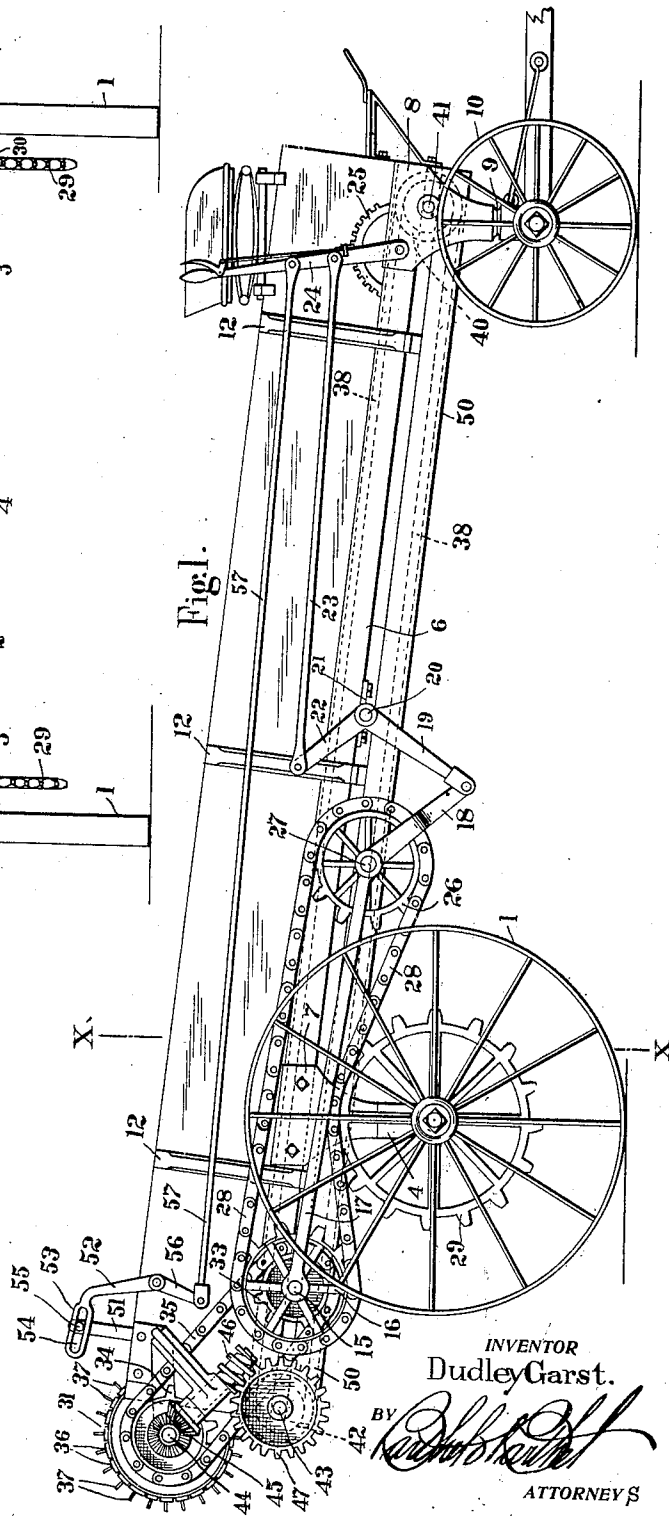


Fig. 1.

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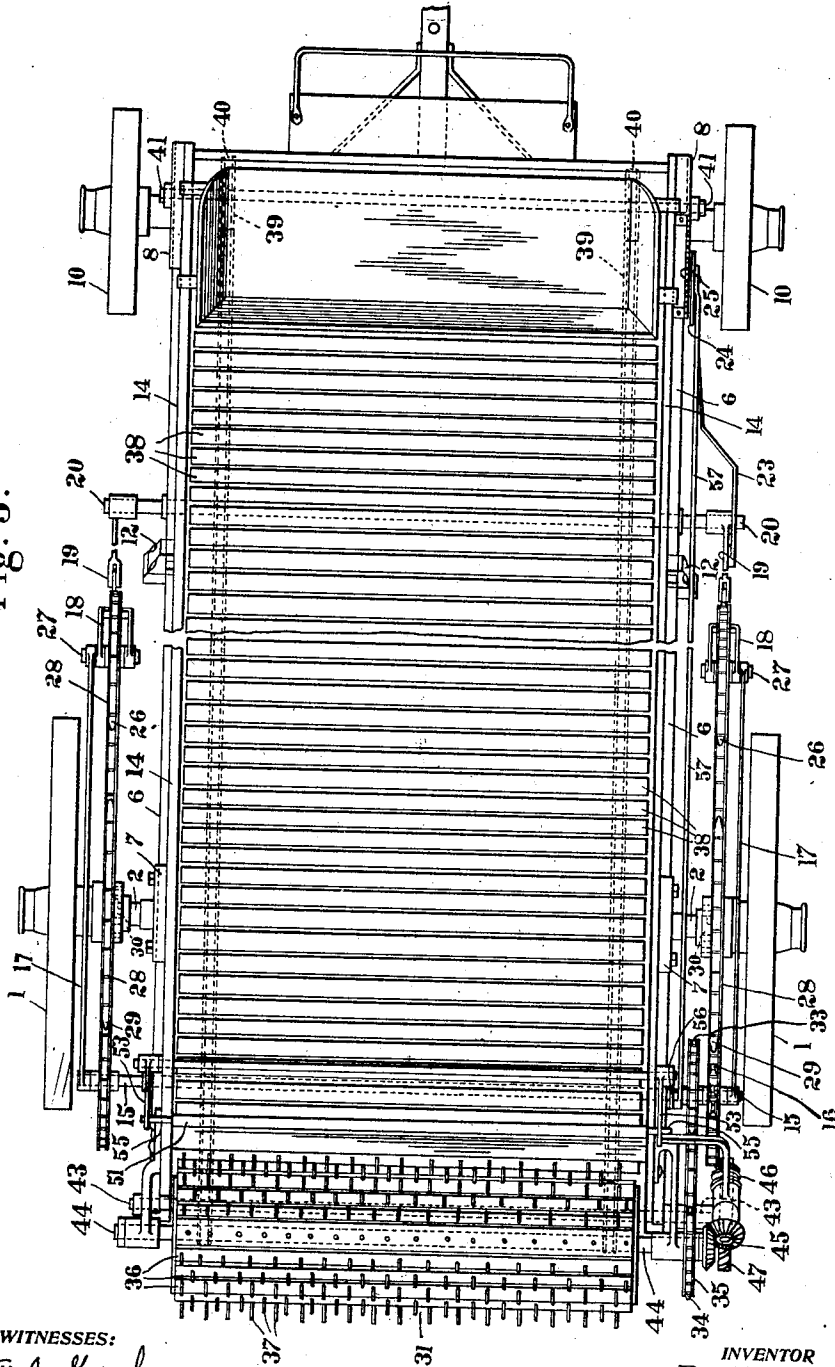
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MANURE SPREADER.
APPLICATION FILED SEPT. 25, 1908.

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2 SHEETS—SHEET 2.

Fig. 3.



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UNITED STATES PATENT OFFICE.

DUDLEY GARST, OF WATERLOO, IOWA.

MANURE-SPREADER.

932,461.

Specification of Letters Patent.

Patented Aug. 31, 1909.

Application filed September 25, 1908. Serial No. 454,715.

To all whom it may concern:

Be it known that I, DUDLEY GARST, a citizen of the United States of America, residing at Waterloo, in the county of Blackhawk and State of Iowa, have invented certain new and useful Improvements in Manure-Spreaders, of which the following is a specification, reference being had therein to the accompanying drawings.

Ordinarily, in the construction of manure spreaders, it is usual to have the discharge end or opening of the carrying body or receptacle either at the lower end or otherwise, so disposed that the contents tends to fall toward the opening, and thereby to pack, cake or settle around it, so that any distributing or delivering means used to positively feed the material through or out of the opening is obliged to work up this packed mass. This also renders accurate regulation of the rate of delivery difficult and increases the work to be done by the distributing mechanism.

This invention relates to a manure spreader wherein the load cannot become clogged around the delivery mouth and wherein there is a positive discharge which may be easily regulated by the operator.

Another object of the invention is to provide simple and effective means for throwing the distributing mechanism in or out of gear, and to arrange the parts to work smoothly so that any back lash or the like which may occur, will not cause intermittent delivery.

The invention consists in the matters hereinafter set forth, and more particularly pointed out in the appended claims.

In the drawings, Figure 1 is a view in side elevation of a machine embodying features of the invention. Fig. 2 is a view in section on line *x-x* of Fig. 1, parts being omitted. Fig. 3 is a plan view, partially broken away, of the machine.

Referring to the drawings, a pair of traction or driving bearing wheels 1 are journaled on the rear axle 2 secured by the usual means as clips 3 to bolsters 4 and 5. Longitudinal body sills 6 are supported near their rear ends at an interval above the upper bolster 5 by suitably designed brackets 7 or the like and are carried near their forward ends by similar brackets 8 above standard bolster and king bolt connections indicated at 9 of front bearing wheels 10 of less diam-

eter than the driving or traction wheels so that the sills are inclined. Bottom boards 11, stanchions 12 on the ends of cross-sills or bars 13, side boards 14 and a front board all of conventional, standard construction, complete the main body.

A drive shaft 15 is journaled in suitable bearings on the underside of the main sills near the rear end of the body, and a pair of sprockets 16 are keyed or otherwise secured on the ends. A pair of rigid radius rods 17 are pivoted at the rear ends to the drive shaft and at their forward ends to links 18 which articulate them to the ends of rock arms 19 of a rock shaft 20, which turns in bearings 21 on the main sills 6. A lever 22, rod 23 and throw out latch lever 24 engaging a quadrant 25 near the operator's seat, or other convenient means are provided for rocking the shaft 20 and consequently raising and lowering the radius rods. An idler sprocket 26 journaled on a stud 27 at the front end of each radius rod and a sprocket drive chain 28 connects each idler with the aligned drive sprocket 16. A main sprocket 29 is journaled on the rear axle 2 adjacent each traction wheel 1 with a ratchet wheel and pawl connection 30 of any suitable design whereby forward rotation of either traction wheel turns the companion sprocket. The drive chains 28 are disposed in the planes of the main sprockets so as to be thrown in or out of mesh with them by proper manipulation of the rock shaft and its operating means.

A beater roller 31 journaled in bearing brackets 32 at an interval above the rear end of the body bottom boards 11, is operatively connected to the drive shaft 15 by any suitable means, as sprockets 33 and 34 and chain 35. In preferred form the periphery of the roller 31 is built up of spaced bars 36 with pickers or teeth 37 extending therefrom.

An endless conveyer flight traverses the bottom of the body longitudinally, and preferably consists of transverse spaced bars or slots 38 on sprocket chains 39 traveling over idlers 40 on an idler shaft 41 near the front end of the main sills 6 and drive sprockets 42 on the drive shaft 43 journaled on the main sills at their upper rear ends below the beater roller. The drive shaft is operated by the traction wheels through any suitable connection. As herein shown as a preferred

form, a transverse shaft 44 connected through a bevel gear train 45 with the beater shaft, has a worm 46 on its lower end, adapted to mesh with a worm gear 47 keyed or otherwise made fast on the conveyer shaft 43. Guide boards 49 on the bolster 5 and false or sub-sills 50 may be used if desired, to house the lower limb of the conveyer flight. Thus the bottom of the body is, in effect, an inclined conveyer adapted to carry material from the lower end to the upper discharge end.

A tail board 51 is raised or lowered over the conveyer flight at the upper or discharge end of the body inside the beater roller, by means of a rock shaft 52 with arms 53 having slots 54 engaging pins 55 on the board, and a lever 56 connected by a link 57 to the latch lever near the operator's seat which throws the mechanism in and out of gear, the parts being so disposed that the gate is raised when the lever is thrown in.

Obviously, any form of compensating transmission mechanism between the traction wheels and the conveyer flight and beater may be used, if desired, also the front end of the body may be elevated, and the flight and its mechanism reversed so as to discharge in front, if preferred.

One of the advantages of this arrangement lies in the fact that the load, which is usually placed in the body and drawn some distance to the place of use, does not settle against but away from the discharge end. This permits the raising of the tail board without any prying or hammering to loosen it, and also allows the carrier to work freely, as it does not travel into but away from that portion of the load which tends to pack and become caked or matted. Another feature is the reverse direction of rotation of the beater against the conveyer, which picks and disintegrates any lumps or clods and evenly distributes the material. A further advantage is the disposition of the conveyer flight whereby the loaded limb is

always taut and therefore does not feed the material against the beater irregularly.

Obviously, changes in the details of construction may be made without departing from the spirit of the invention, and I do not care to limit myself to any particular form or arrangement of parts.

What I claim as my invention is:—

1. The combination in a manure spreader, of a body, traction bearing wheels supporting the body, a beater at the discharge end of the body, a conveyer secured permanently in an inclined position and adapted to move the contents of the body upwardly toward the beater, and driving means connecting the wheels to the beater and the conveyer, the inclination of the conveyer being only sufficient to take up lost motion in the driving means when the conveyer is loaded.

2. A manure spreader comprising a body, an inclined endless conveyer flight traversing the body longitudinally adapted to carry material to its upper end, the inclination of the flight being only sufficient to hold the loaded limb taut, a driving shaft journaled in the body and operatively connected to the flight, a sprocket wheel on each end of the driving shaft, a pair of radius rods pivoted at the inner end on the drive shaft, an idler sprocket wheel pivoted on the outer end of each radius rod, a drive sprocket chain connecting each idler with an adjacent drive shaft sprocket, a pair of traction bearing wheels for the body, a drive sprocket adjacent each traction wheel in the plane of rotation of a drive sprocket chain, operatively connected to the traction wheel and means supporting the outer ends of the radius rods adapted to move the drive chains in and out of mesh with the traction wheel sprockets.

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

DUDLEY GARST.

Witnesses:

C. R. STICKNEY,
OTTO F. BARTHEL.