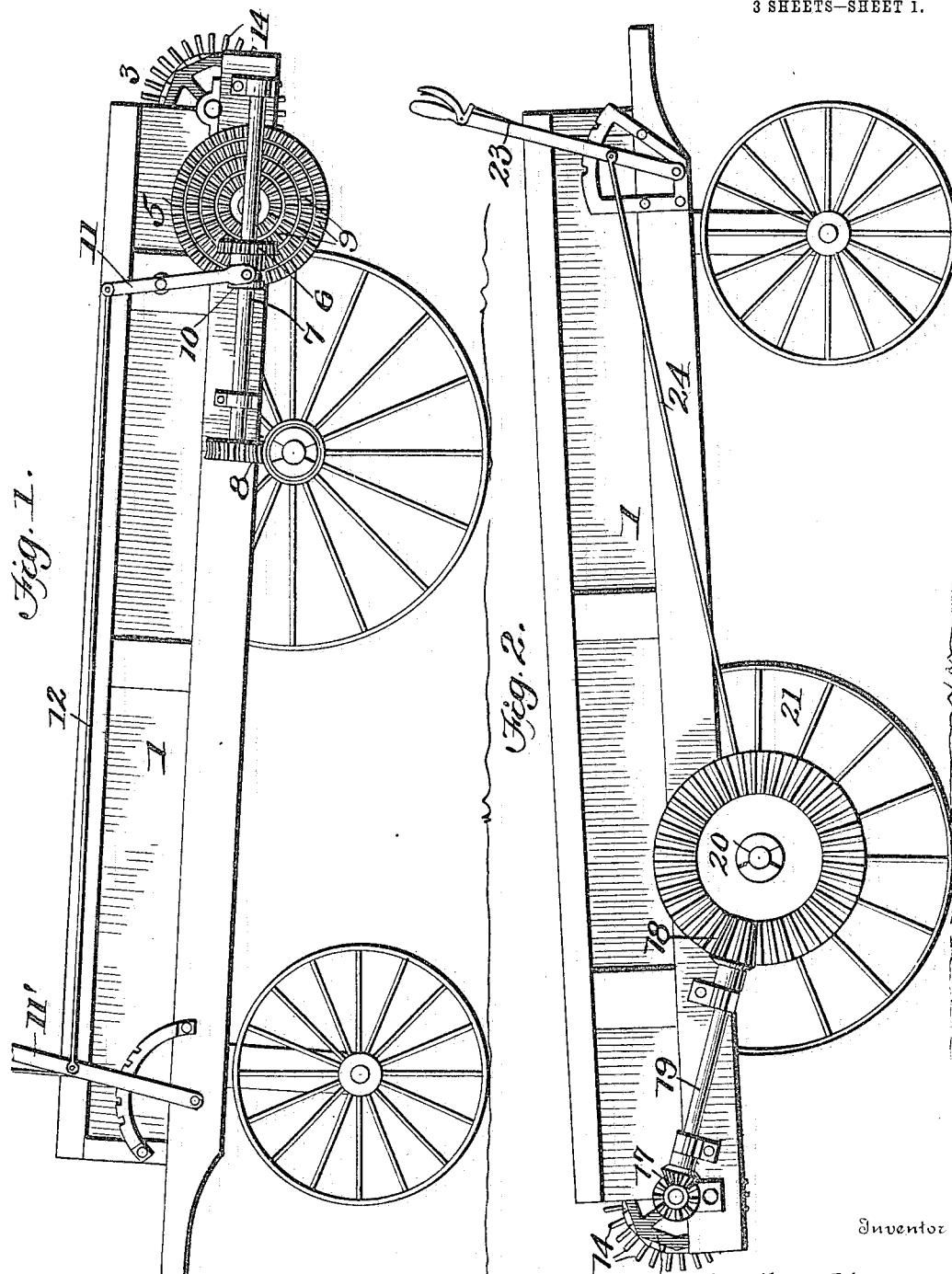


No. 809,808.

PATENTED JAN. 9, 1906.

C. JOHNSON.
FERTILIZER DISTRIBUTER.
APPLICATION FILED OCT. 17, 1903.

3 SHEETS—SHEET 1.



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3 SHEETS-SHEET 2.

Fig. 3.

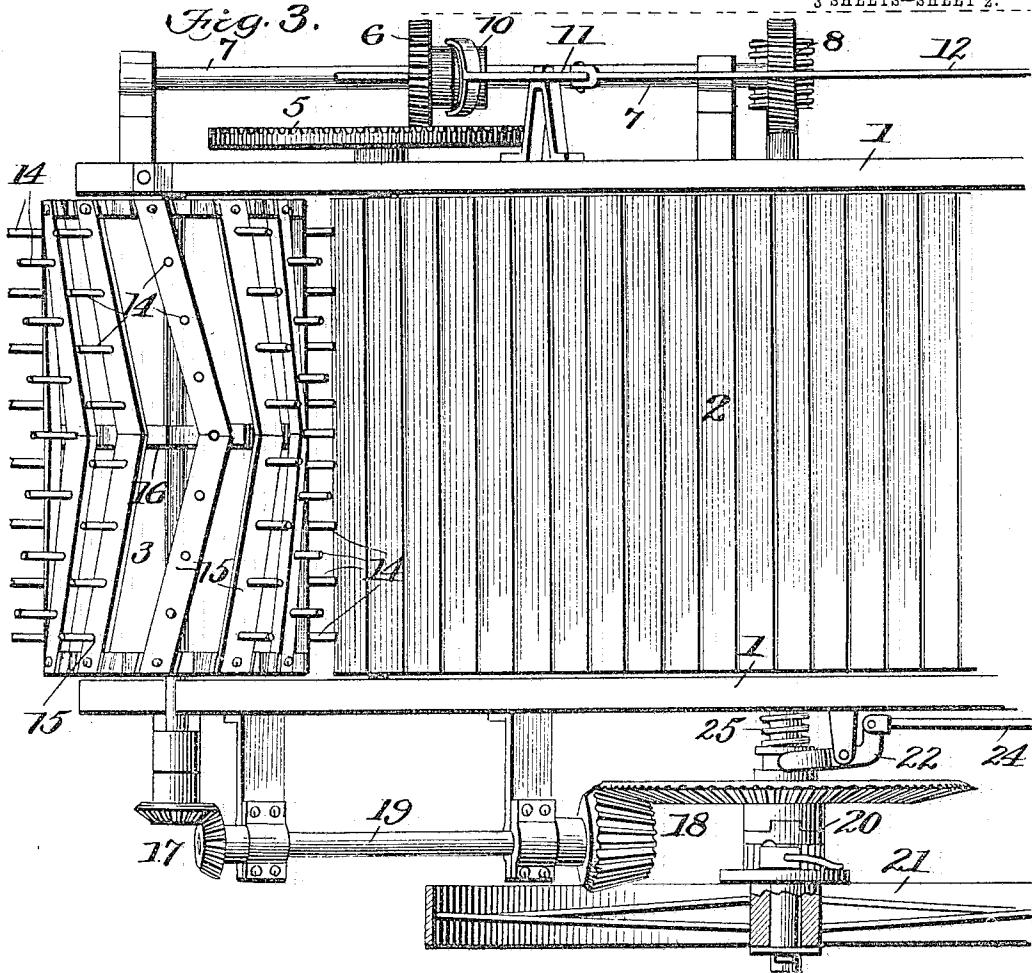
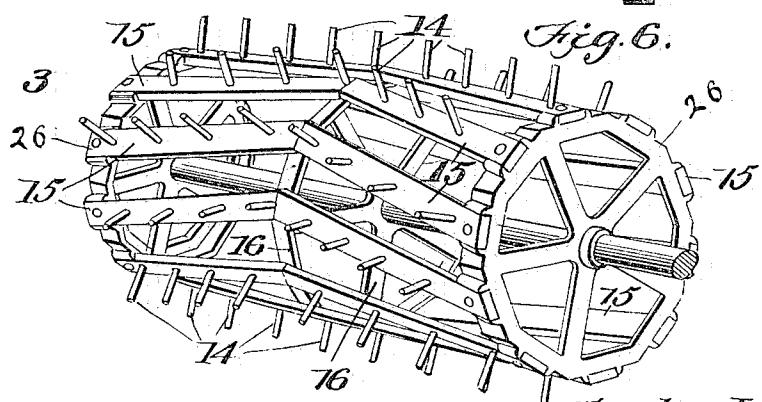


Fig. 6.



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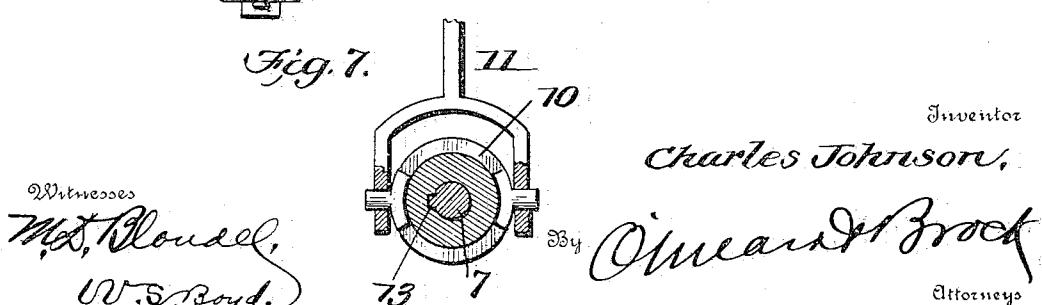
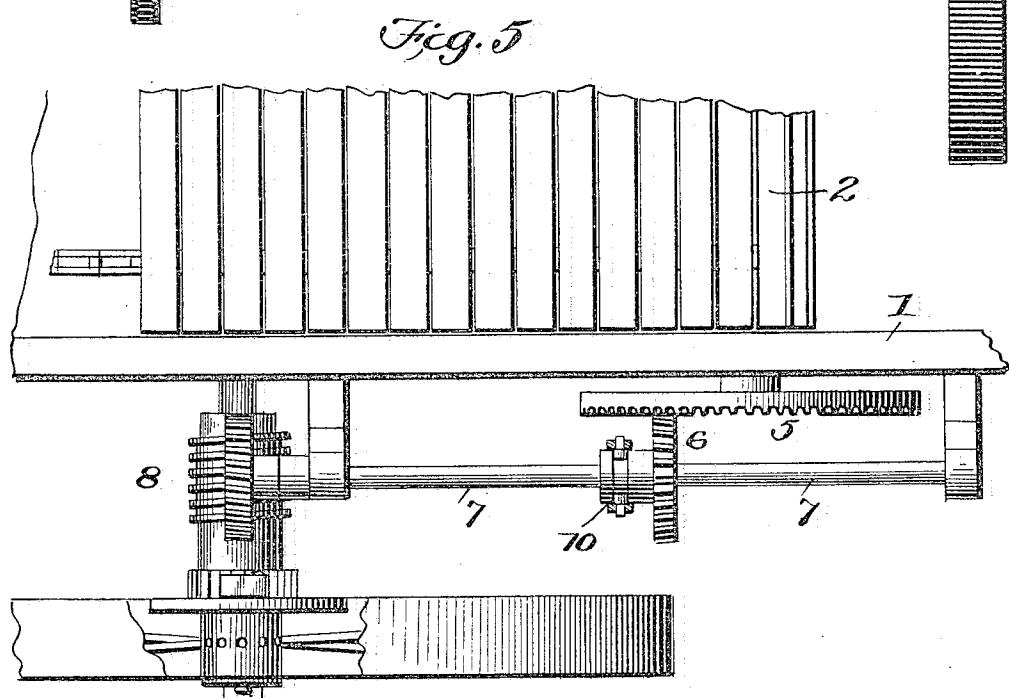
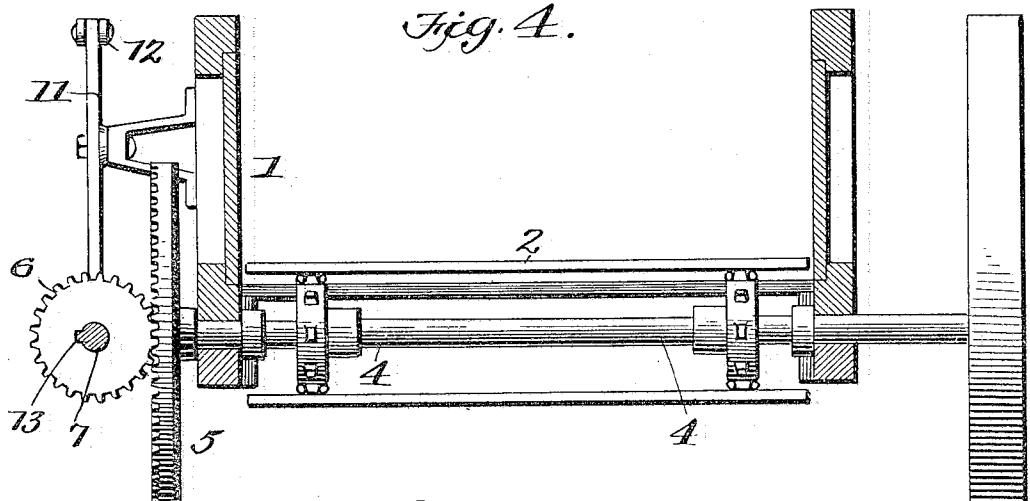
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UNITED STATES PATENT OFFICE.

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FERTILIZER-DISTRIBUTER.

No. 809,808.

Specification of Letters Patent.

Patented Jan. 9, 1906.

Application filed October 17, 1903. Serial No. 177,437.

To all whom it may concern:

Be it known that I, CHARLES JOHNSON, a citizen of the United States, residing at Cortland, in the county of Cortland and State of New York, have invented a new and useful Fertilizer-Distributer, of which the following is a specification.

My invention relates to fertilizer-distributors, and especially to that class of such machines in which the material is carried to the rear end of the vehicle or wagon body by means of an endless apron and then distributed by means of a toothed cylinder or spreader. In devices of this kind heretofore constructed the teeth of the spreader have been arranged on a straight line substantially parallel with the axis of the spreader; but this arrangement is objectionable, for the reason that all of the teeth of each line are caused to engage with the material at the same time, thereby throwing an extra load upon the mechanism, which is liable to break it. It also causes the material to be delivered or thrown from the spreader in straight rows or bunches the length of the cylinder and at a distance apart equal to the distance traveled by the machine from the time that one row of teeth discharges its load until the next row discharges.

One object of my invention is to avoid these objections, which I accomplish by arranging the teeth at other than in a line parallel with the axis—as, for instance, on an incline or spiral—which may extend part or all of the way across the face of the spreader or cylinder.

Another object of my invention is to provide independent mechanism for running the apron and the spreader whereby the speed of the two relatively to each other may be changed at will or entirely stopped.

With these and other objects in view my invention consists in the improved construction and novel arrangement of parts of a fertilizer-distributer, as will be hereinafter more particularly set forth.

In the accompanying drawings, in which the same reference-numerals indicate corresponding parts in each of the views in which they occur, Figure 1 is a side elevation of one form of machine embodying my invention. Fig. 2 is a similar view of the other side of the machine, the near hind wheel in each view being omitted. Fig. 3 is a top plan view of the rear end of the machine, some of the parts being broken away. Fig. 4 is a transverse

sectional view of the same. Fig. 5 is a broken enlarged top plan view of a portion of the machine. Fig. 6 is a perspective detail view of the spreader. Fig. 7 is a broken detail view of one form of clutch mechanism.

Referring more particularly to the drawings, 1 indicates the bed or body portion of my improved fertilizer, which may be of any ordinary construction and supported in any desired manner.

2 indicates the slatted bottom, which is arranged to carry the material to the rear portion of the bed, where it is delivered to the spreader 3.

Although the bottom of the machine may be driven in any suitable manner, I prefer to provide one end of its rear roller 4 with a toothed wheel 5, with which a beveled pinion 6 engages, the pinion being mounted upon 75 and driven by a shaft 7, which in turn is driven from the axle of the machine by suitable means, as worm-gearing 8. As it is desirable to vary the speed of the apron or slatted bottom to regulate the delivery of the fertilizer, the face of the wheel 5 is preferably provided with concentric rows of cogs 9, with any one of which the pinion 6 can be made to engage by means of the shifting clutch 10, lever 11, and rod 12, the shaft 7 being provided with a feather 13, which engages with the pinion at all points of its longitudinal movement upon the shaft and causes it to rotate at a uniform rate of speed with the forward travel of the machine. By shifting the 90 pinion to the center of the bevel-wheel 5 or moving it beyond its periphery the apron can be stopped without stopping the travel of the machine, thereby placing the movement of the apron entirely under control of the driver, as 95 the lever 11 is located at the forward end of the machine adjacent the driver's seat.

The spreader 3 is preferably formed as a hollow cylinder having webbed ends 25, with the teeth 14 projecting radially from bars or 100 slats 15, which form the periphery of the cylinder. Heretofore these slats have been arranged in a straight line from end to end of the cylinder substantially parallel with the axis. As the tips or free ends of the teeth 105 are arranged to travel in close proximity to the rear end of the apron it is evident that by arranging them in this manner all of the teeth of each row must be brought into simultaneous engagement with the material 110 which has been carried to that point by the apron, which must necessarily place a greater

strain upon the machinery than would be the case if the teeth were arranged so that only a portion of each row be caused to engage with the material and the remaining teeth engage with the material in successive order. One form of accomplishing this I have shown in the drawings, in which the bars or slats 15 are inclined relatively to the axis of the cylinder and extend only a portion of the length of the cylinder, the slats at the opposite ends of the cylinder being inclined in opposite directions and secured at their inner ends to a central support or head 16. The cylinder ends 25 have their peripheries recessed, and the outer ends of the slots 15 fit in these recesses, the sides of the recesses being oblique with reference to the axis of the cylinder. As the central head 16 is substantially of the same diameter as the end pieces 26, the setting in of the outer ends of the slots 15 will give a bulge at the longitudinal center of the cylinder thus formed, its exterior diameter being greater midway its length than at the ends. By arranging the teeth in this manner and spacing the slats at a distance apart substantially equal to the inclination of the slats relatively to the axis it is evident that only a few of the teeth of each row—as, for instance, those at the ends or at the center, as the case may be, owing to the direction in which the inclination of the slats are arranged—will engage with the material at a time, and thereby produce a very even and uniform strain upon the machinery, the teeth of each slat being arranged to begin their initial engagement with the material at the termination of the engagement therewith by the teeth of the preceding row. In addition to the uniform engagement of the teeth with the material, as above described, it is evident that the material will be discharged from the spreader more evenly and uniformly than if it should be thrown from straight rows of teeth, as in the latter case it would be deposited in bunches substantially as long as the length of the cylinder.

One means for rotating the cylinder consists of two sets of beveled gearing 17 and 18, connected by the shaft 19. One set of the gearing is at one end of the beater-shaft, preferably on the side of the machine opposite to the mechanism for running the apron, and the other set is at the rear axle of the machine. The larger or driving gear of the set 18 is mounted on the axle and provided with suitable clutch mechanism 20, by means of which it may be thrown into and out of gear with the rear wheel 21. A lever or yoke 22, mounted on the side of the bed 1 in position 60 for engaging with the clutch 20, is operated by means of a handle 23 and a rod 24, the handle being located at the forward end of the

bed adjacent to the driver's seat, so as to be in convenient reach for throwing the spreader into and out of operation. A spring 25 on the axle normally holds the clutch in engagement with the wheel, and thereby prevents its accidental disengagement and the stopping of the spreader.

In operation the bed is filled with fertilizer in the usual manner and transported to the field for distribution. When the material is to be discharged, the handles at the ends of the seat are manipulated to throw the mechanism into engagement with the wheel and axle of the machine, which will cause the material to be gradually carried to the rear of the bed and from there distributed upon the ground in an even and uniform manner, the rotation of the spreader being upward and to the rear, so that the material is carried up over the spreader, which will prevent clogging of the machine and will also permit a portion of the material to pass down through the slats of the machine and fall on the ground between the points where the main portion is deposited from the teeth, thereby assisting in the uniform distribution of the material.

Although I have shown what I consider the best form of constructing my improved spreader and the mechanism for operating it and the apron, it is evident that alterations and variations could be made, as by extending the rows of teeth on a straight incline from end to end of the cylinder or in a spiral, and I reserve the right to make all such changes and alterations as will come within the scope of my invention.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A fertilizer-distributer comprising a spreader provided with an end piece provided with peripheral recesses at each end and a head midway the ends, slats secured at their outer ends in the recesses of one of the end heads and at their inner ends to the central head, the slats at one end of the spreader being arranged at an angle to those at the opposite end, and teeth carried by the said slats.

2. In a fertilizer-distributer, the combination with a vehicle-body and an axle, and wheels for supporting the same; of a shaft journaled at one end of the body, means for transmitting rotary motion thereto from an axle, heads upon the shaft, oppositely-disposed series of slats secured upon the heads, said series being arranged at angles to each other, and teeth extending from the slats.

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Witnesses:

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R. C. DUELL.