

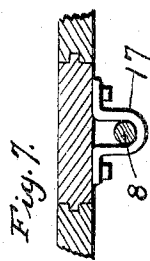
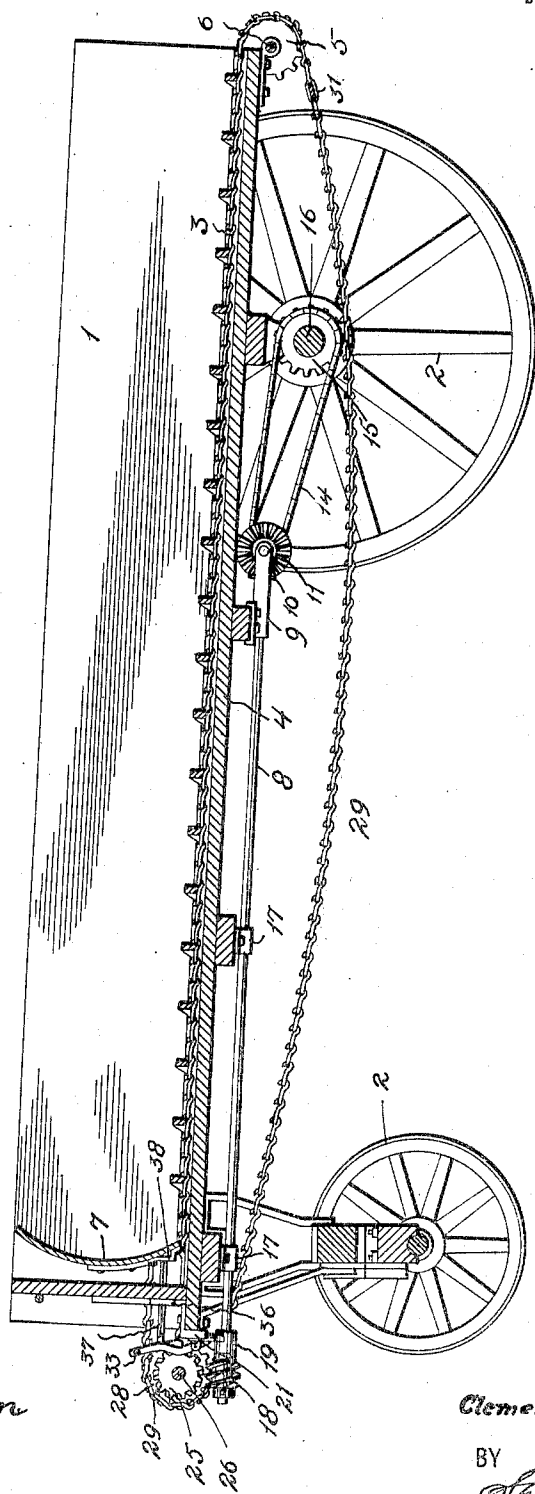
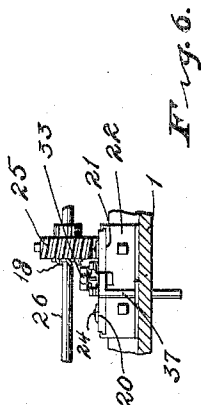
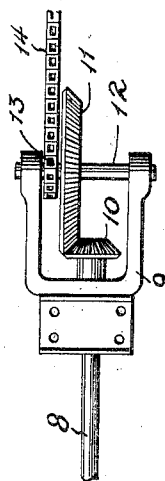
No. 788,648.

PATENTED MAY 2, 1905.

C. L. V. KINNEY.
FERTILIZER DISTRIBUTER.

APPLICATION FILED DEC. 2, 1904.

2 SHEETS—SHEET 1.



WITNESSES:

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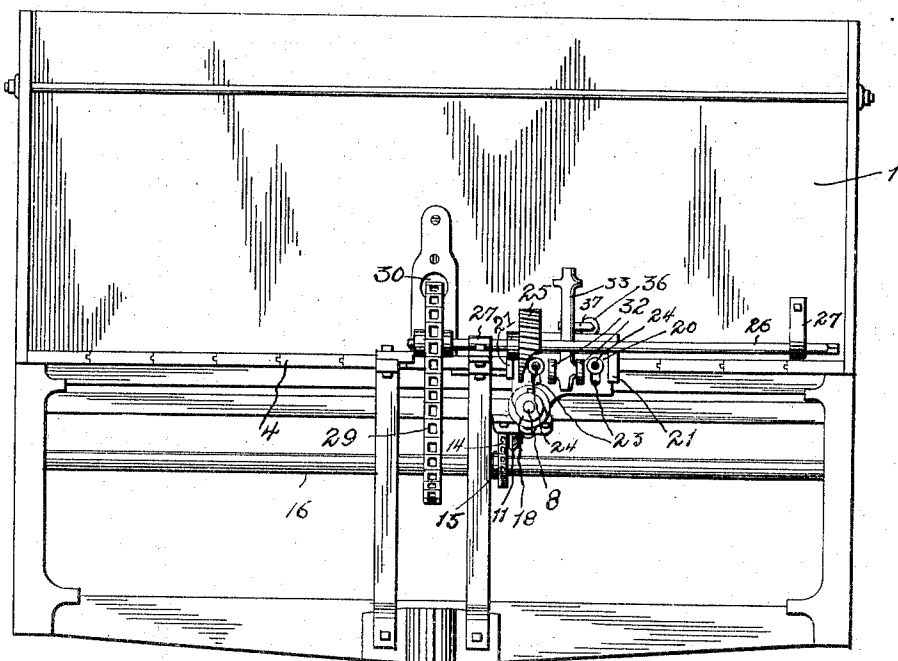
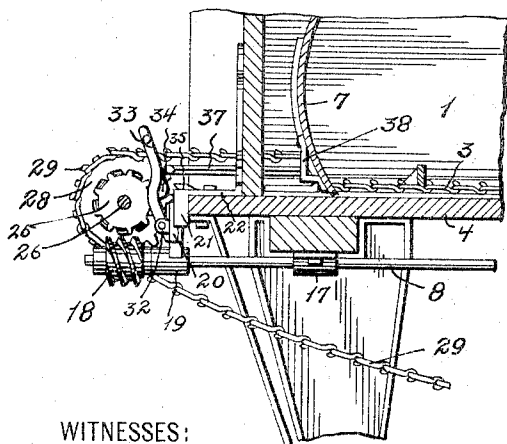


Fig. 2.

Fig. 3.

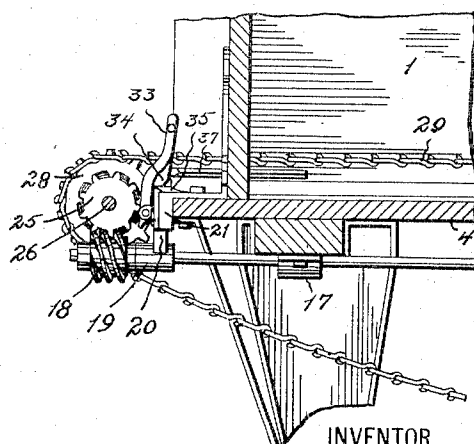


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Fig. 4.



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UNITED STATES PATENT OFFICE.

CLEMENT L. V. KINNEY, OF NEWARK, OHIO, ASSIGNOR TO THE NEWARK MACHINE COMPANY, OF NEWARK, OHIO, A CORPORATION OF OHIO.

FERTILIZER-DISTRIBUTER.

SPECIFICATION forming part of Letters Patent No. 788,648, dated May 2, 1905.

Application filed December 2, 1904. Serial No. 235,159.

To all whom it may concern:

Be it known that I, CLEMENT L. V. KINNEY, a citizen of the United States, residing at Newark, in the county of Licking and State of Ohio, have invented a certain new and useful Improvement in Fertilizer-Distributers, of which the following is a specification.

My invention relates to a new and useful improvement in fertilizer-distributers, and more particularly to a drag-returning mechanism.

The object of the invention is to provide superior means of simple construction for returning the drag to the forward end of the body and automatically stopping the same when it reaches the said forward end.

Another object resides in providing a device of the character described that will be strong, durable, efficient, and simple and comparatively inexpensive to make and one in which the several parts will not be liable to get out of working order.

With the above and other objects in view the invention consists of the novel details of construction and operation, a preferable embodiment of which is described in the specification and illustrated in the accompanying drawings, wherein—

Figure 1 is a longitudinal sectional view of a fertilizer-distributer, showing my returning mechanism applied thereto. Fig. 2 is a front elevation of the distributer and mechanism shown in Fig. 1. Fig. 3 is a detailed longitudinal sectional view of the forward end of the fertilizer-distributer, showing the worm-gears out of engagement. Fig. 4 is a similar view to Fig. 3, showing the worm-gears in engagement. Fig. 5 is a detailed plan view of portions of the shaft and its driving mechanism. Fig. 6 is a plan view of the shaft-raising mechanism and its component parts; and Fig. 7 is an end elevation of one of the shaft-supporting brackets, showing the shaft and a portion of the body-bed in section.

In the drawings the numeral 1 designates the body of the fertilizer-distributer, which is suitably supported from ground-wheels 2 and arranged with a chain conveyer or feed 3,

which travels along the bed 4 of the body and passes over a sprocket 5, supported at the rear end of the body upon the drive-shaft 6. It is to be understood that the drive-shaft 6 may be driven in any suitable manner—as, for instance, as is shown in my application for Letters Patent filed November 9, 1903, and bearing serial number 180,323. The chain conveyer 3 is secured at its forward or free end to the drag or drag-plate 7, which normally occupies a position adjacent the forward end of the body, as shown in Fig. 1. It will be apparent that when the sprocket 5 is rotated to the right the drag and chain conveyer will be drawn over the bottom until the rear end of the body is encountered, when a suitable mechanism (not shown) forces the driving mechanism out of gear with the shaft 6 and stops the rearward movement of the chain conveyer and the drag.

My invention resides more essentially in means for returning the drag to its normal position, together with the chain conveyer, when the parts have reached the position just described. For the purpose of utilizing the power generated by the forward movement of the distributer, I arrange beneath the bed 4 a shaft 8, supported at its rear end in the yoke-shaped bracket 9, secured to the body-bed and carrying on its rear end a bevel-pinion 10, which meshes with and is driven by the bevel-gear 11, mounted upon a counter-shaft 12, supported in the bracket 9. The shaft 12 also has keyed thereupon a sprocket 13, which is connected by means of a sprocket-chain 14 to a larger sprocket 15, keyed upon the axle 16 of the rear ground-wheels 2. It will be apparent that upon the forward movement of the distributer or spreader motion will be transmitted from the axle 16 to the shaft 12 and by means of the gear 11 and pinion 10 to the shaft 8. The shaft 8 is supported in the brackets 17, secured to the bed 4, said brackets being constructed to allow the shaft at its forward end to be raised up and down, but to prevent any lateral movement thereof. At its forward end the shaft has fixed thereon a worm 18, and in the rear

thereof a loosely-mounted collar 19, which is formed integral with an upwardly-extending plate 20. The plate 20 is formed at each side with vertically - extending flanges or ribs which slidably engage in the socket portion 21 of the right-angular plate 22, which is securely supported from the bed 4. The slide-plate 20 is formed with slots 23, through which project the headed pins 24, secured to the socket portion 21, thus forming a guide and a support for the said plate 20. It is obvious that the pins 24 will support the plate 20, and thus the shaft 8 when the same is in its lowermost position. While in this position it is obvious that the shaft 8 is free to rotate without in any way affecting the drag or the chain conveyer 3. Arranged over the worm 18, but normally out of engagement therewith, is a worm-gear 25, keyed upon a transverse shaft 26, suitably supported in boxings 27 and carrying at its inner end a sprocket 28. Over the sprocket 28 passes a chain 29, secured to the forward end of the drag 7, by passing through an aperture 30 in the forward end of the body and connected at its opposite end by means of a suitable coupling 31 to the chain conveyer 3. The chain 29 is of such length as to pass entirely under the body of the spreader and allow the drag 7 and the chain conveyer 3 a full and unrestricted movement. The worm 18 and worm-gear 25 normally being out of engagement, the chain 29 is allowed to pass freely over the sprocket 28 and the drag 7 is moved rearwardly; but it is apparent that when the plate 20 is raised so as to bring the worm 18 into mesh with the worm-gear 25 motion is transferred to the shaft 26 and the sprocket 28 given a forward movement, which serves to draw the drag 7 and conveyer chain 3 forward.

For raising the plate 20 and holding it in its raised position I pivotally mount between ears 32, projecting forwardly from the plate 20, a lever 33, which extends upwardly and is bent rearwardly and formed with a rearwardly-projecting lug 34. This lug is shaped and formed to engage over a lip or projection 35, formed upon the outer face of the plate 22, and thus hold the worm 18 and worm-gear 25 in mesh. To one side of the lever 33 I arrange in the forward end of the body 1 a bushing 36, through which projects a plunger 37, formed at its forward end with a right-angular lateral extension extending behind the lever 33, so as to contact therewith. The opposite end of the plunger 37 projects within the body some distance, so as to be engaged by the bracket 38, secured upon the forward face of the drag 7. The plunger 37 is loosely mounted in the bushing 36, and it is obvious that as the drag is carried forward the bracket 38 coming in contact with the end of the plunger forces the same forward, and the latter's laterally-extending arm portion contacting with the lever pushes the same forward off the lip 35, thus

allowing the plate 21 to drop by reason of the weight of the shaft 8 and the worm-gear, thereby throwing the said worm 18 and the worm-gear 25 out of mesh, and thus arresting the forward movement of the drag.

It is apparent that in order to raise the worm 18 and the shaft 8 so that the said worm meshes with the worm-gear 25 it is merely necessary to grasp the lever 33 and pull the same upward and then engage the lug 34 over the lip 35, in which position it will remain until struck by the plunger 37.

I preferably form the bed 4 of the body 1 solid, as I have found that where a chain conveyer is used the best results are obtained by such a construction.

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

1. In a device of the character described, the combination with a spreader-body, a conveyer and a drag, of a driving-shaft mounted beneath the body, a gear mounted on the shaft, a counter-shaft supported above the driving-shaft, a gear mounted on the last-named shaft normally out of engagement with the first-named gear, means for connecting the last-named shaft with the drag and the conveyer, means for raising the driving-shaft and its gear into mesh with the gear of the counter-shaft, and means adapted to be actuated by the drag when it approaches the head of the body for automatically lowering the driving-shaft and throwing the gears out of engagement.

2. In a device of the character described, the combination with a spreader-body, the ground-wheels thereof, a conveyer and a drag, of a driving-shaft supported beneath the body and projecting forwardly thereof, mechanism for transmitting motion from the rear ground-wheels to the driving-shaft, a gear carried by the shaft at its forward end, a counter-shaft mounted above the forward end of the driving-shaft, a gear supported upon the counter-shaft normally out of engagement with the gear of the driving-shaft, a sprocket carried by the counter-shaft, a chain passing over the sprocket and engaged at one end with the drag and at its opposite end with the conveyer, a vertically-movable plate supporting the forward end of the driving-shaft, a lever carrying a projection adapted to engage a fixed point, and a plunger formed to strike the lever and dislodge its projection from its fixed point of engagement.

3. In a device of the character described, the combination with a spreader-body having a solid bottom, a chain conveyer traveling on the solid bottom and a drag attached to the conveyer, of a driving-shaft mounted on the under side of the body, a gear mounted on the shaft, a counter-shaft supported above the driving-shaft, a gear mounted on the last-named shaft normally out of engagement with

the first-named gear, means for connecting the last-named shaft with the drag and the chain conveyer, means for raising the driving-shaft and its gear into mesh with the gear of the counter-shaft, and means adapted to be actuated by the drag when it approaches the head of the body for automatically lowering

the driving-shaft and throwing the gears out of engagement.

CLEMENT L. V. KINNEY

In presence of—

JNO. P. McCUNE,
M. E. HUDDLE.