

(No Model.)

2 Sheets—Sheet 1.

J. HOTHAM.
LIME DISTRIBUTER.

No. 323,683.

Patented Aug. 4, 1885.

Fig: 1.

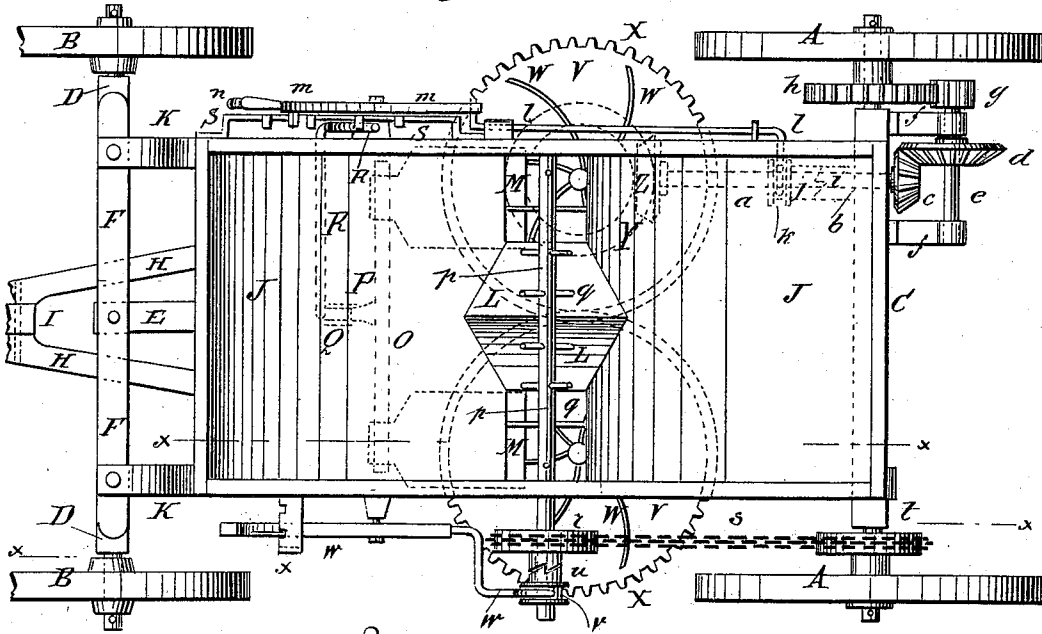
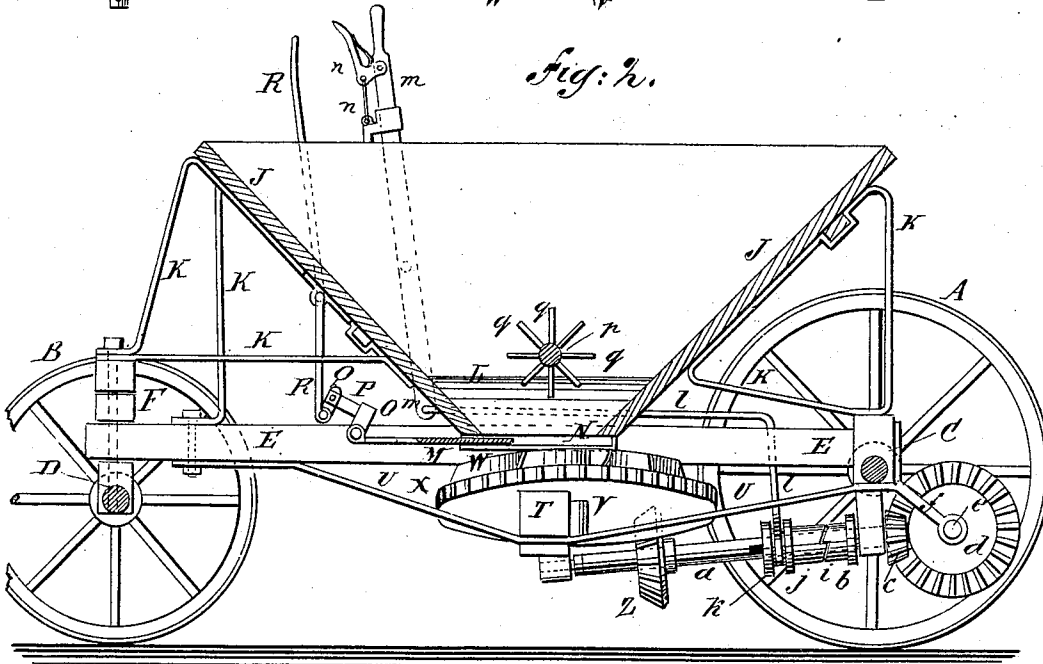


Fig: 2.



WITNESSES:

Chas. Nida
C. Sedgwick

INVENTOR:

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BY *Munn & Co*
ATTORNEYS.

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Fig. 3.

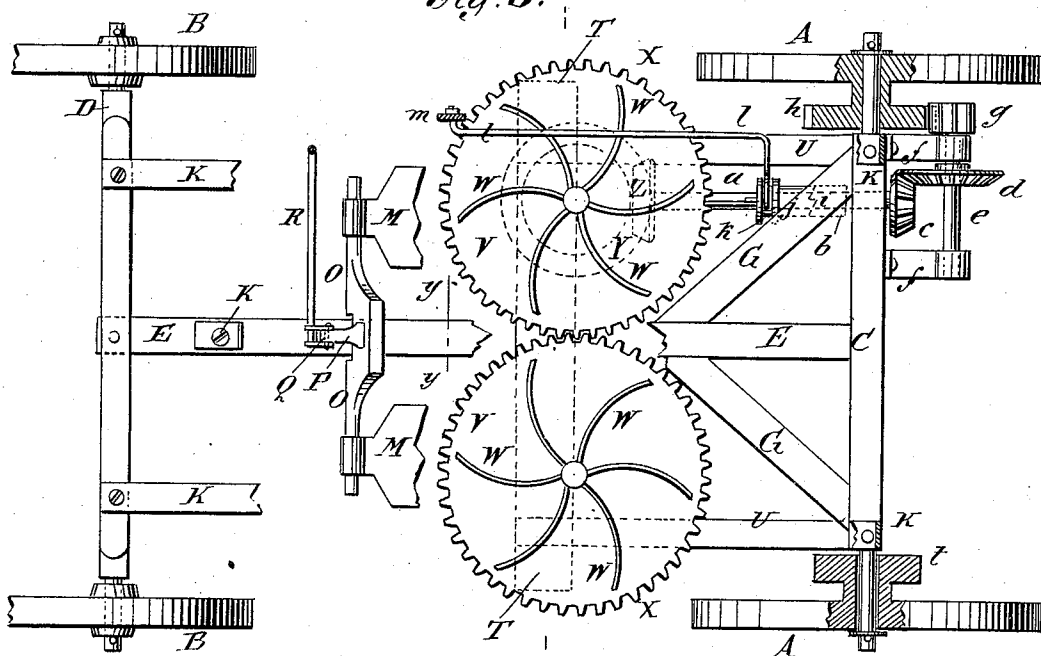
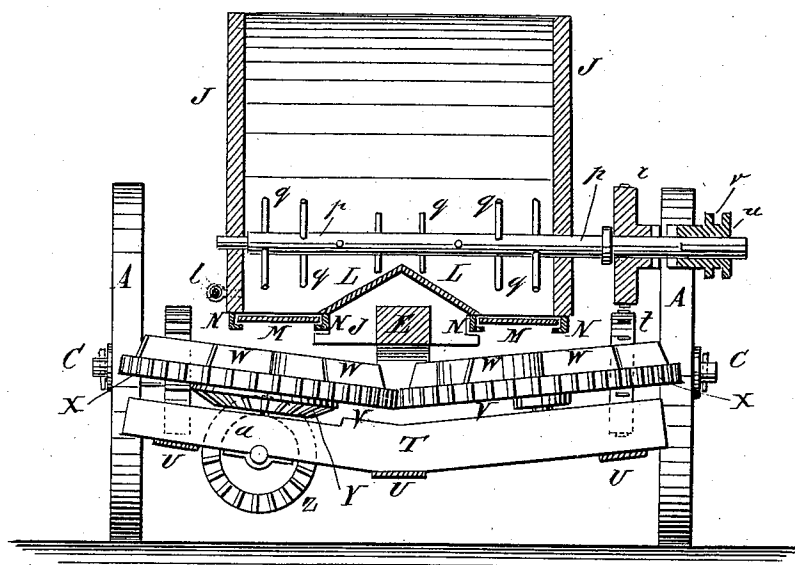


Fig. 4.



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UNITED STATES PATENT OFFICE.

JOHN HOTHAM, OF HILLSIDE, PENNSYLVANIA.

LIME-DISTRIBUTER.

SPECIFICATION forming part of Letters Patent No. 323,683, dated August 4, 1885.

Application filed February 11, 1885. (No model.)

To all whom it may concern:

Be it known that I, JOHN HOTHAM, of Hillside, in the county of Westmoreland and State of Pennsylvania, have invented certain new and useful Improvements in Lime-Distributers, of which the following is a full, clear, and exact description.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1, Sheet 1, is a plan view of one of my improved lime-distributers, part being broken away. Fig. 2, Sheet 1, is a sectional elevation of the same, taken through the line *x x x x*, Fig. 1. Fig. 3, Sheet 2, is a plan view of the same, the hopper and its attachment being removed and parts being broken away. Fig. 4, Sheet 2, is a sectional front elevation of the same, taken through the line *y y y y*, Fig. 3.

The object of this invention is to provide machines for distributing lime which shall be simple in construction, reliable in operation, and readily controlled.

The invention relates to a lime-distributer constructed with wheels pivoted beneath the discharge-openings of the hopper, provided with curved radial flanges and connected by gearing with a rear wheel of the machine. The size of the discharge-openings is regulated by sliding plates connected with a sliding cross-bar, provided with an arm and operated by a lever. The lime in the lower part of the hopper is agitated and made to pass out freely by a shaft provided with radial pins and driven from a rear wheel by chain-wheels and an endless chain, as will be hereinafter fully described.

A represents the rear wheels; B, the forward wheels; C, the rear axle; D, the forward axle; E, the reach; F, the bolster; G, the rear hounds; H, the forward hounds, and I the tongue, which parts form a running-gear similar to the running-gear of a wagon.

J is the hopper, which is made with vertical sides and inclined ends, as shown in Figs. 1, 2, and 4. The middle parts of the lower edges of the ends of the hopper J are extended downward below the side parts of the said ends, and are recessed to receive and are se-

cured to the reach E. The hopper J is further secured in place by bars K, attached to it and to the rear axle, C, the reach E, and the bolster F. The middle part of the space between the lower edges of the inclined ends of the hopper J is closed by the bottom L, which inclines downward from its center toward each side.

The size of the discharge opening at the sides of the bottom L is regulated by plates M, which slide in rabbeted cleats N, attached to the hopper J. The forward ends of the sliding plates M are pivoted to the rounded ends of a cross-bar, O, the lower edge of the middle part of which is recessed to receive and slide upon the reach E.

To the forward side of the center of the bar O is rigidly attached an arm, P, with the forward end of which is connected, by a link, Q, the end of the inwardly-projecting arm of the lever R, which lever extends upward along the side of the hopper J, and is pivoted to a support attached to the side of the said hopper, so that the sliding plates M can be readily adjusted by operating the said lever R.

The lever R is held securely in any position into which it may be adjusted by a catch-bar, S, attached to the upper part of the side of the hopper J, and along which the upper part of the said lever moves.

Beneath the discharge-openings of the hopper J is placed a cross-bar, T, which inclines upward from its center toward its ends, as shown in Fig. 4, and which is supported by bars U, attached to it and to the rear axle, C, and the reach E.

To bearings attached to the rear side of the cross-bar T are pivoted the distributing-wheels V in such positions that the pivots of the said wheels will be beneath the outer parts of the rear edges of the discharge-openings of the hopper J, as shown in Fig. 1.

To the upper sides of the wheels V are attached radiating flanges W, which are curved forward, as shown in Figs. 1 and 3, and by which the lime will be distributed, spread, or sown by centrifugal force as the said wheels V are rapidly revolved by the advance of the machine.

Upon the rims of the wheels V are formed, or to them are attached, gear-wheels X, the

teeth of which mesh into each other, so that the said gear-wheels will revolve together and in opposite directions.

To the lower side of one of the distributing-wheels V is attached a beveled gear-wheel, Y, the teeth of which mesh into the teeth of the beveled gear-wheel Z, attached to the shaft *a*. The forward end of the shaft *a* revolves in a bearing attached to the lower side of the cross-bar T, and its rear end revolves in a sleeve, *b*, which revolves in a bearing attached to the lower side of the rear axle, C, and to the rear end of which is attached a small beveled gear-wheel, *c*. The teeth of the small gear-wheel *c* mesh into the teeth of the larger beveled gear-wheel *d*, attached to the inner end of the short shaft *e*, which revolves in bearings in brackets *f*, attached to the rear axle, C, and to the outer end of which is attached a small gear-wheel, *g*. The teeth of the small gear-wheel *g* mesh into the teeth of the larger gear-wheel *h*, attached to the hub of the rear wheel, A.

Upon the inner end of the sleeve *b* are formed clutch-teeth *i*, with which engage the teeth of the clutch *j*. The clutch *j* slides upon the shaft *a*, and is connected with the said shaft by a tongue and groove or other suitable means, so that the said clutch will carry the said shaft with it in its revolution. Upon the clutch *j* is formed an annular groove, *k*, with which engages the forked inwardly-bent rear end of the rod *l*, which slides in bearings attached to the side of the hopper J, and to the forward end of which is pivoted the lower end of the lever *m*. The lever *m* extends upward along the side of the hopper J, and is pivoted to a support attached to the said side of the hopper. The upper part of the lever *m* is provided with a spring-lever pawl, *n*, which engages with the catch-bar S, attached to the side of the hopper J, to hold the said lever in position when the clutch *j* is in gear, and when it is out of gear with the sleeve *b*.

With this construction the distributing-wheels V will be driven with a rapid motion by the slow advance of the machine, and can be readily thrown into and out of gear, as may be required.

In bearings in the lower parts of the sides of the hopper J is journaled a shaft, *p*, to which are attached radial pins *q*, so that the revolution of the shaft *p* will keep the lime in the lower part of the hopper loose and cause it to pass out freely. One end of the shaft *p* projects, and upon it is placed a loose chain-wheel, *r*, around which passes an endless chain, *s*. The chain *s* also passes around a chain-

wheel, *t*, attached to the hub of the rear wheel, A, so that the chain-wheel *r* will be driven by the advance of the machine. The chain-wheel *r* is made to carry the agitator-shaft *p* with it in its revolution by the clutch *u*, placed and sliding upon the said shaft *p*, and connected with it by a tongue and groove or other suitable means. Around the clutch *u* is formed an annular groove, *v*, to receive the forked lower end of the lever *w*, which is pivoted to a support attached to the side of the hopper J. The upper part of the lever *w* moves along a catch-bar, *x*, attached to the side of the hopper J, and by which the said lever is held in place when holding the clutch *u* in gear and out of gear with the chain-wheel *r*.

It will be noticed that the distributing-wheels are arranged at an angle, with their outer edges the highest. By this construction the lime is given a better throw, and is distributed, consequently, over a larger surface of ground.

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

1. A lime-distributer, comprising a carriage, a hopper supported thereon, and a revolving distributing-wheel arranged at an angle to the plane of support of the carriage, with its outer edge higher than its inner edge, substantially as set forth.

2. In a lime-distributer, the combination, with the hopper J and the running-gear of the machine, of the cross-bar T, the distributing-wheels V, having curved radial flanges W, and the gear-wheels X X, Y, Z, *c*, *d*, and *g h*, substantially as herein shown and described, whereby the lime will be distributed by the advance of the machine, as set forth.

3. In a lime-distributer, the combination, with the hopper J and the reach E, of the sliding plates M, the sliding cross-bar O, having arm P, and the lever R, substantially as herein shown and described, whereby the size of the discharge-opening can be readily regulated, as set forth.

4. The combination of the hopper, the drive-wheel, two intergeared distributing-wheels located below the hopper and arranged at an angle with their inner adjacent edges lower than their other or outer edges, and gearing connecting one of said disks with the drive-wheel, substantially as set forth.

JOHN HOTHAM.

Witnesses:

JAMES E. NEWINGHAM,
S. E. BURCHFIELD.