J. LYTCH.

Fertilizer-Distributors.

No. 144,465. Patented Nov. 11, 1873.

Fig: 1.

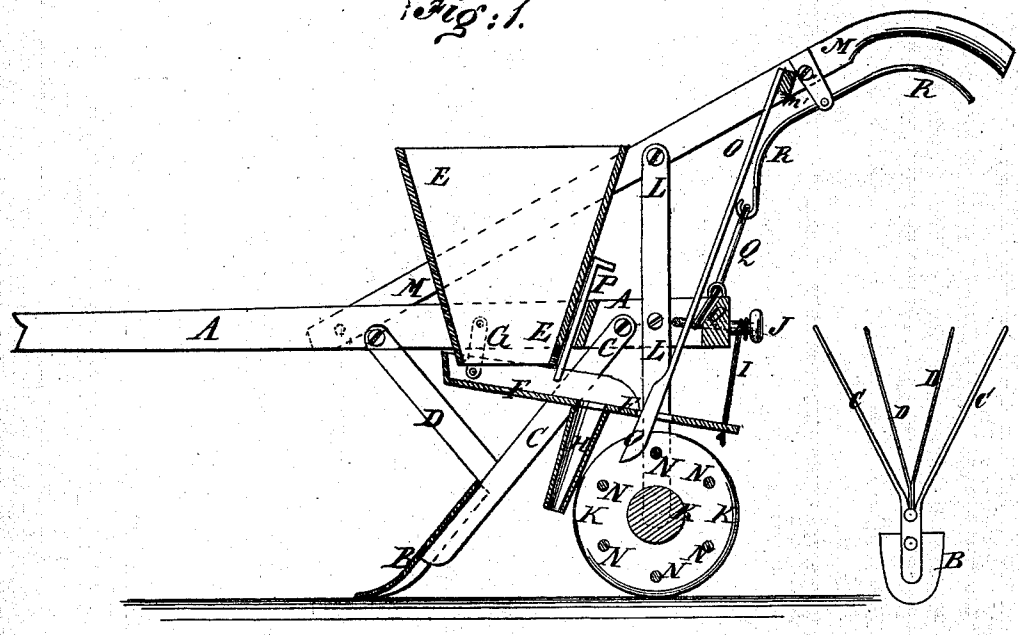
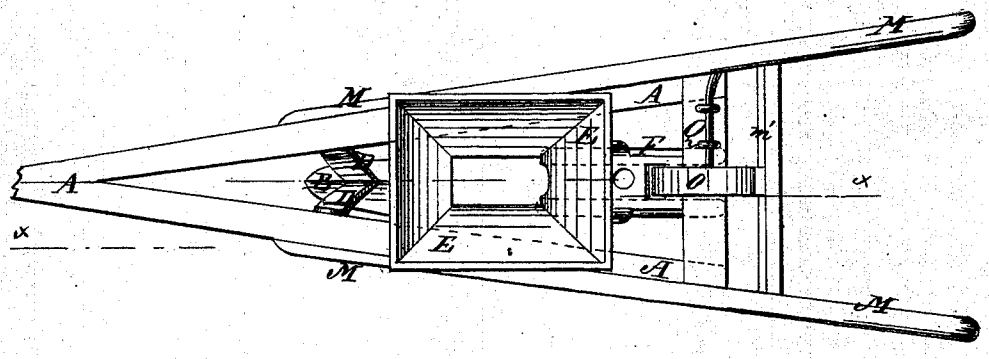


Fig: 2.



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UNITED STATES PATENT OFFICE.

JAMES LYTCH, OF LAURINBURG, NORTH CAROLINA.

IMPROVEMENT IN FERTILIZER-DISTRIBUTERS.

Specification forming part of Letters Patent No. **144,465**, dated November 11, 1873; application filed August 9, 1873.

To all whom it may concern:

Be it known that I, JAMES LYTCH, of Laurinburg, in the county of Richmond and State of North Carolina, have invented a new and useful Improvement in Combined Guano-Distributer and Plow, of which the following is a specification:

Figure 1 is a vertical longitudinal section of my improved machine taken through the line *x x*, Fig. 2. It also shows a rear view of the plow-standard and brace. Fig. 2 is a top view of the same.

Similar letters of reference indicate corresponding parts.

My invention has for its object to furnish an improved machine for opening a furrow and distributing guano in it preparatory to planting cotton or other seed, and which shall be simple in construction, convenient in use, and reliable in operation. The invention consists in the shoe provided with a spout, pivoted suspension-bars, and adjustable suspension-cord, the grooved wheel provided with its cross-rods, and the spring, in combination with the hopper, the plow-beam, and the plow; and in the combination of the lever, and the double crank or crank-lever, with the handle, the plow-beam, and the spring, for holding said spring away from the wheel, as hereinafter fully described.

A is the beam, which is formed of two bars meeting each other at an acute angle at their forward ends, and connected at their rear ends by a short cross-bar, so as to form a space for the hopper and shoe. B is the plow, which is attached to the lower end of the standard C, which is made **V**-shaped, and is strengthened by a **V**-shaped brace, D. The upper ends of the standard C and brace D are secured to the bars of the beam A, thus having a clear space for the shoe. E is the hopper, which is made with an open bottom, and is placed between and secured to the bars of the beam A. F is the shoe, which is made with an upwardly-projecting flange upon the edges of its sides and forward end. The forward end of the shoe F is suspended by two short bars, G, the lower ends of which are pivoted to the side flanges of the shoe F, and their upper ends are pivoted to the sides of the hopper E, so as to allow the shoe to have a backward and forward movement. In the shoe F, just in the rear of the standard C, is formed a hole, through which the guano escapes to the ground, and in which is secured a spout or tube, H, extending nearly to the ground, and which is designed to guide the guano into the furrow, and prevent it from being blown about by the wind. The rear part of the shoe F is supported by a cord, I, the lower end of which is secured to said shoe, and its upper end is secured to a knob, J, attached to the cross-bar of the beam A, so that the inclination of the shoe F, and consequently the rapidity of discharge, may be increased and diminished by unwinding the cord from and winding it upon said knob. K is the wheel placed directly in the rear of the conduction-spout H, and pivoted to and between the lower ends of the bars L, which are attached to the bars of the beam A, and to the handles M. The wheel K is made with a deep **V**-shaped groove in its face, and with a number of rods, N, crossing said grooves near the periphery of the wheel. O is a spring, the upper end of which is secured to the round *m'* of the handles M. The lower part of the spring O passes through a hole in the rear part of the shoe F, and its lower end rests against the cross-rods N of the grooved wheel K. By this arrangement, as the wheel K revolves, each rod N pushes the lower end of the spring O forward, which end, as it escapes from said rod, springs back against the next rod, thus jarring the shoe, and insuring the constant and regular discharge of the guano. The amount of guano escaping from the hopper E is also regulated by a slide, P, which works in a keeper attached to the lower part of the rear side of said hopper, so as to cover more or less nearly the notch formed in the lower edge of said side. Q is a double crank or crank-lever, which is pivoted to the cross-bar of the beam A. The lower arm of the crank Q rests in a recess in the forward side of the cross-bar of the beam A, directly in the rear of the spring O. To the end of the upper arm of the crank Q is pivoted the lower end of the lever R, which is pivoted at its middle part to the handle M, and its upper end projects along and a little below the hand-piece of said handle, so as to be readily operated by the plowman without removing his hand from the plow-handle.

By this construction, by operating the lever R the lower part of the spring O is thrown forward away from the rods N of the wheel K, to allow the shoe F to stand still, and thus enable the distribution of guano to be stopped when desired.

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

1. The shoe F provided with a spout, H, pivoted suspension-bars G, and adjustable suspension-cord I, the grooved wheel K provided with its cross-rods N, and the spring O, in combination with the hopper E, beam A, and plow B C D, substantially as herein shown and described.

2. The combination, with the handle M, beam A, spring O, and shoe F, of the lever R, and double crank or crank-lever Q for holding said spring and shoe away from the wheel K N, substantially as herein shown and described.

JAMES LYTCH.

Witnesses:
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