J. H. LEACH.

Fertilizer.

No. 22,505. Patented Jan. 4. 1859.

Fig 1

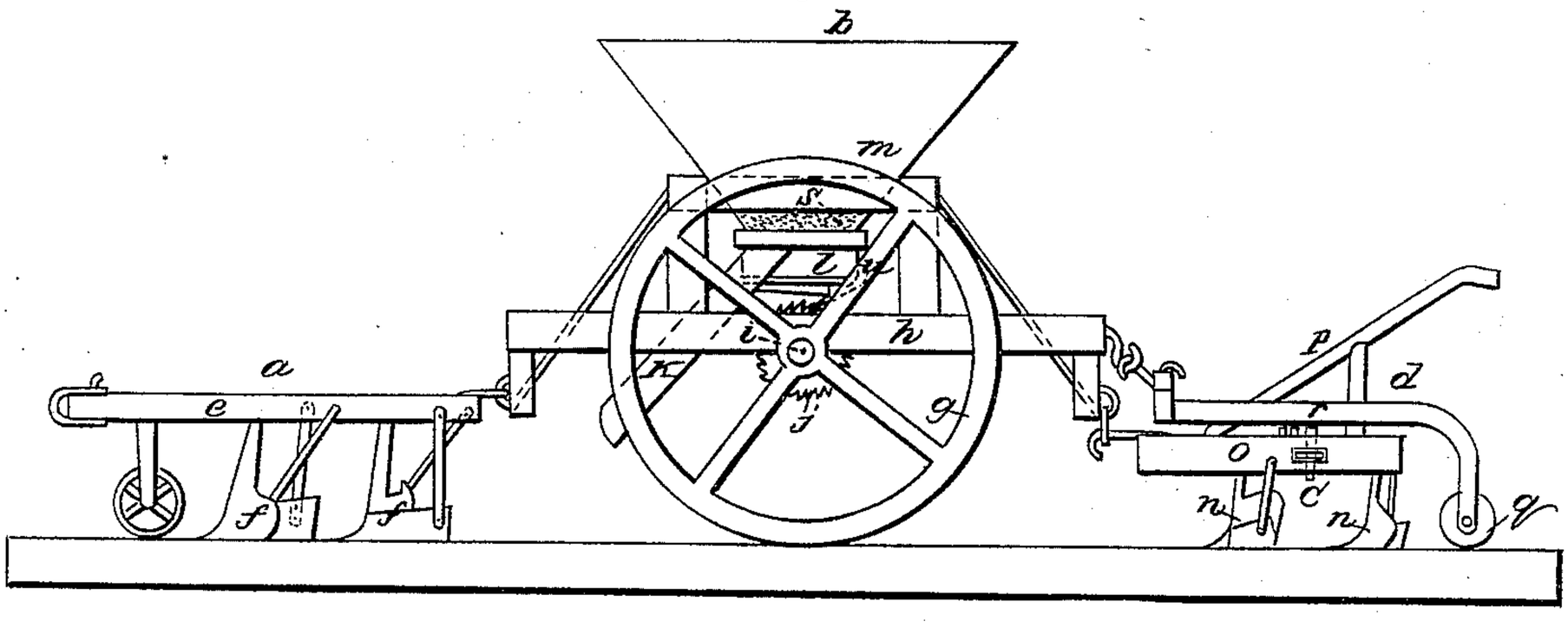
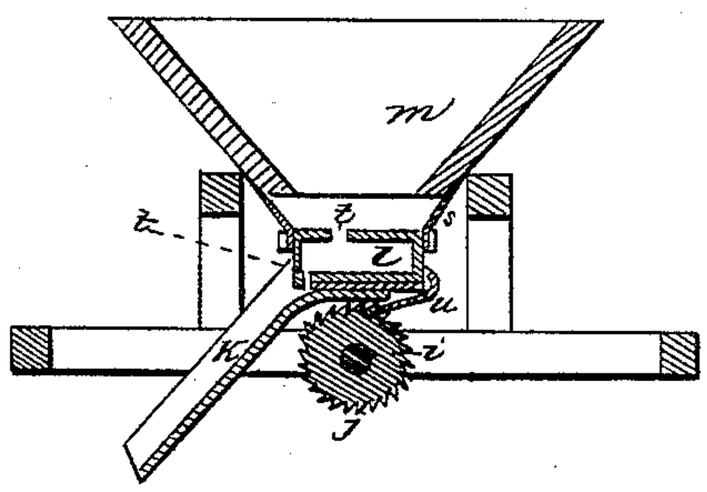


Fig 2



Witnesses:

Alfred Maddox
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Inventor:

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UNITED STATES PATENT OFFICE.

JOHN H. LEACH, OF OAKVILLE, MARYLAND.

IMPROVEMENT IN MACHINES FOR SOWING GUANO AND OTHER FERTILIZERS.

Specification forming part of Letters Patent No. **22,505**, dated January 4, 1859.

To all whom it may concern:

Be it known that I, JOHN H. LEACH, of Oakville, St. Mary's county, in the State of Maryland, have invented certain new and useful Improvements in Guano-Drills; and I do hereby declare the following to be a clear and exact description of the same, reference being had to the accompanying drawings and to the letters and marks thereon.

Figure 1 of the drawings is a side view of the entire drill, Fig. 2 being a vertical sectional view of so much of the drill as is necessary to show the connections of the hopper and box and distributing-spout and the means for operating them.

My drill is designed to prepare the ground for setting out tobacco-plants. It is made up of four sections—the one, *a*, for making the furrow, a second section, *b*, for distributing guano or whatever fertilizer may be used into the furrow, a third section, *c*, for covering the turned-up earth upon the guano in the furrow, and a fourth section, *d*, for leveling and pressing down the earth constituting the bed for the tobacco-plants. To the first section the horses or team are attached, this section being connected to the second section by an ordinary hook and eye, the second being connected to the third and fourth sections by similar means, so that every section may be detached and separated from any one section. The first section consists of a beam, *e*, and two or more drills, *f*. The second section is composed of the wheels *g*, carriage-frame *h*, axle *i*, upon which is a toothed wheel, *j*, for actuating the distributing parts of this section, a spout, *k*, box *l*, and hopper *m*. The third section has the coverers *n* attached to a V-shaped frame, *o*, which has guiding-handles *p;* and the fourth section is made up of the roller *q*, which, by its frame *r*, is attached to the rear of the second section.

The leading features of this drill are, first, that relating to the arrangement of the third and fourth sections; and, second, that pertaining to the means for distributing the guano embraced in the second section. It will be perceived, by referring to the drawings, that the third and fourth sections are both attached to the rear of the second section, the third section being surrounded by the frame of the fourth section. This arrangement allows the one individual to guide the team by the reins to control the movements of the coveres, and to press with more or less force the roller upon the earth. He is thus enabled, by controlling the team, to have the guano distributed with more or less rapidity, to cover the guano with a greater or less quantity of earth, and to give to the bed a greater or less degree of compactness, as the heaviness or lightness of the soil may render necessary or desirable. This arrangement allows him control over all parts of the drill. The box *l* of the second section is attached to the hopper *m* by leather, sheet india-rubber, or any suitable elastic, material *s*. The spout *k* is rigidly connected to the box. Holes *t t* in the box permit the guano to pass into it from the hopper, and from it into the spout for distribution. A latch, *u*, upon the rear of the box, when the axle *i* is rotated, is hit by the teeth of the wheel *j*, and thus the spout and the box vibrated. The passage of the guano through the box and spout is thus urged, while it comes from the hopper into the box by its gravity and the jarring the whole section receives. The latch *u* can be turned out of gear with the toothed wheel *j*, and then the distribution of the guano will be due only to the general jarring of this section.

Having thus fully set out the construction and operation of my invention, what I claim as new, and desire to secure by Letters Patent, is—

The arrangement of the covering-section of the drill within the frame of the roller-section, as and for the purposes herein set forth, and in connection therewith the arrangement of the box between the hopper and distributing-spout, the box being attached to the hopper by pliable or elastic material, and being vibrated with the spout by the toothed wheel upon the axle, as herein described.

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Witnesses:

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