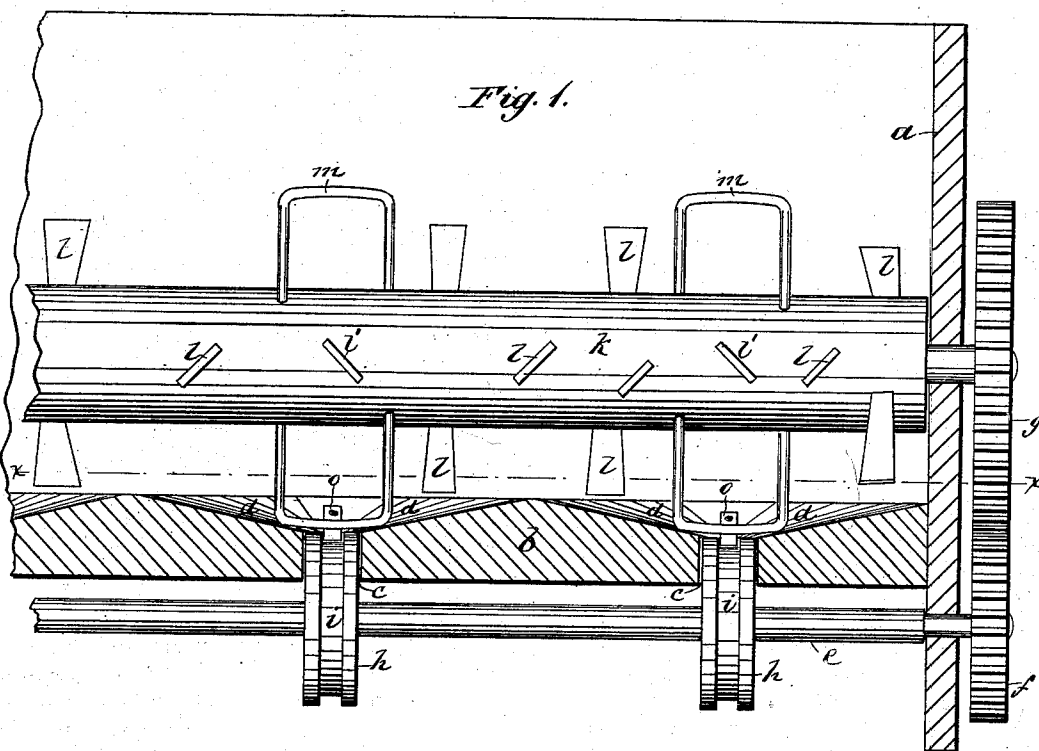
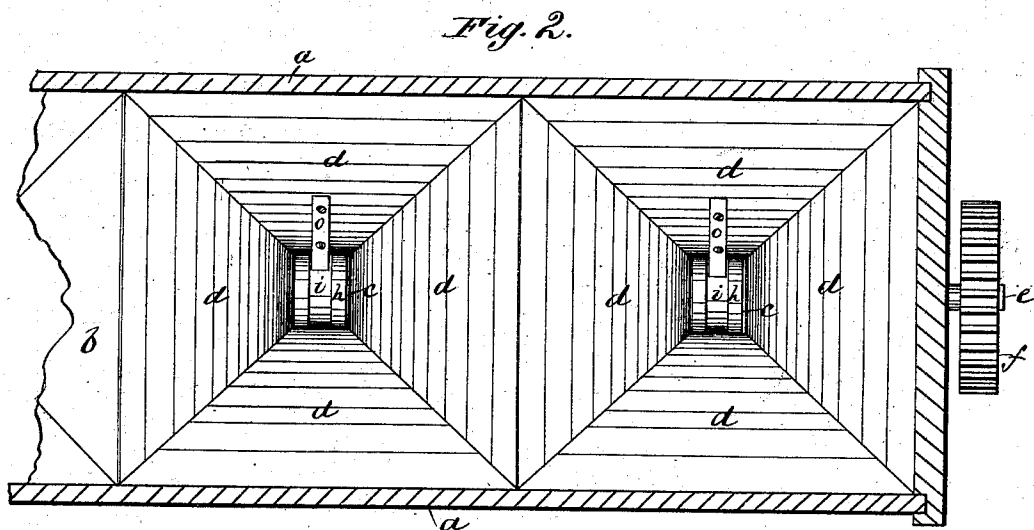


(No Model.)

J. RANKIN.  
Guano Distributer.

No. 242,979.

Patented June 14, 1881.



WITNESSES:

*W. W. Hollingsworth*  
*John C. Kernon*

INVENTOR:

*James Rankin*  
BY *Wm. L. Rankin*

ATTORNEYS.

# UNITED STATES PATENT OFFICE.

JAMES RANKIN, OF FAIRLEE, MARYLAND.

## GUANO-DISTRIBUTER.

SPECIFICATION forming part of Letters Patent No. 242,979, dated June 14, 1881.

Application filed April 14, 1881. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES RANKIN, of Fairlee, in the county of Kent and State of Maryland, have invented a new and useful Improvement in Guano-Distributers; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a vertical longitudinal section of my improved fertilizer-distributer, and Fig. 2 is a horizontal section on line *x x* of Fig. 1.

My invention relates to improvements in guano-distributers arranged on the frame of a seed-drill; and it consists of a guano-hopper provided with a series of openings or slots in its bottom, in each of which slots projects a part of the circumference of a revolving wheel provided with a central groove, which receives and carries the guano to the seed-spout, a roll provided with arms and staples and passing longitudinally through the hopper being employed to force the guano into the grooved wheels, as hereinafter more fully set forth.

In the accompanying drawings, *a* represents a guano-hopper adapted to be arranged on the frame of a seed-drill.

*b* represents the bottom of the hopper, provided with a series of slots or openings, *c*. The upper face of the bottom of the hopper adjacent to each slot is beveled downward or formed of four or more planes, *d*, inclined downwardly to each slot, so as to conduct the guano to the slots or openings in the bottom of the hopper; or, in other words, the upper face of the bottom of the guano-hopper is composed of a series of hoppers, *d*, each of which leads to an opening in the bottom of the guano-hopper.

*e* represents a shaft journaled below and in the continuations of the ends of the hopper *a*, and carrying a series of wheels, *h*, each projecting into an opening, *c*, in the bottom of the hopper *a*, and each provided with a central groove, *i*, on its circumference. The outer end of the shaft *e* is provided with a cog-wheel, *f*, which meshes with a cog-wheel, *g*, on the journal of a roll, *k*, journaled in the ends of the hopper and provided with arms *l* arranged along the periphery of the roll, and inclined staples *m* (two or more) being arranged over

each slot in the bottom of the hopper. The function of the revolving arms *l* and revolving staples *m* secured to the roll *k* is to feed the guano into the hoppers *d* in the bottom of the guano-hopper, and thence into the grooves in the revolving wheels *h*, the guano being conducted from the grooves into a cup or hopper; thence into a boot or guano-tube leading into a seed-tube, from which, with the seed, it is discharged into a furrow.

*o o* represent a series of scrapers, preferably made of steel, one of which is secured to the upper face of the bottom of the hopper, opposite the end of each slot, and projecting into the groove *i* of the wheel *h*, whereby the groove is kept free.

It will be seen that the inclined staples *m* are driven into the revolving roll *k* on opposite sides thereof, and directly over the openings *c* in the bottom of the hopper. Arms *l'* are also secured to the roll *k* on opposite sides of the roll and directly over the openings *c*. By this construction the horizontal part or body of the staples *m*, joining the legs, and the arms *l'* over the openings *c* in the revolution of the roll *k* sweep or force the guano into the grooves in the wheels *h*.

I am aware that a fertilizer-distributer consisting of a hopper with openings in its bottom for the escape of the fertilizer into pockets in the peripheries of a series of wheels arranged under the openings in the bottom of the hopper (the hopper being also provided with a longitudinal shaft carrying stirrers) has heretofore been employed, and I therefore lay no claim, broadly, to such construction, my invention being confined to the peculiar construction and arrangement of parts claimed.

What I claim as my invention is—

The combination, with the hopper *a*, provided with a series of slots, *c*, in its bottom, having beveled sides *d*, of the roll *k*, having stirrers *l* and arms *l'*, and inclined staples *m*, arranged directly over the openings *c*, shaft *e*, carrying the grooved wheels *h*, and cog-gears *f g*, substantially as described, and for the purpose set forth.

JAMES RANKIN.

Witnesses:

SOLON C. KEMON,  
CHAS. A. PETTIT.