D. ENGLAR, Jr.

Guano-Distributer.

No. 210,310. Patented Nov. 26, 1878.

Fig. 2.

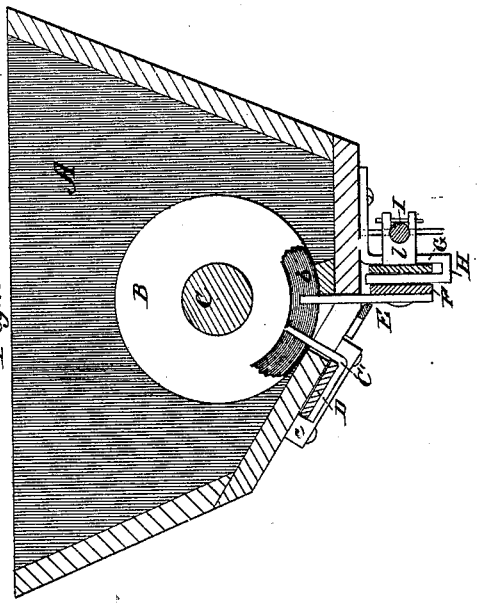


Fig. 4.

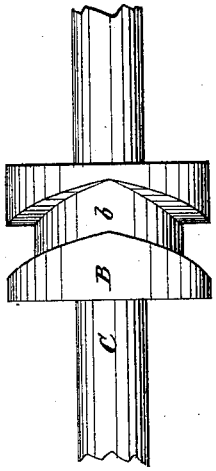


Fig. 1.

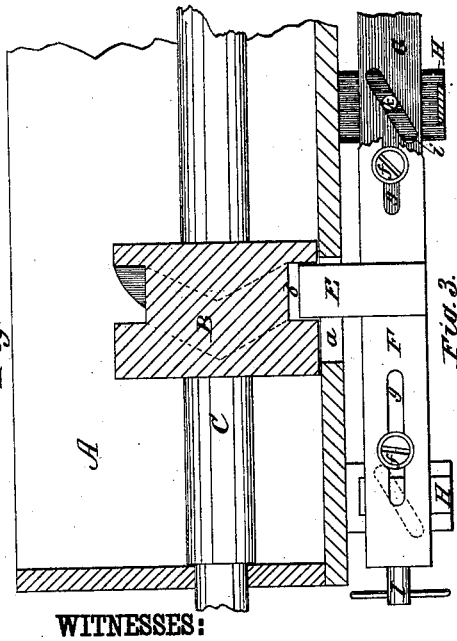
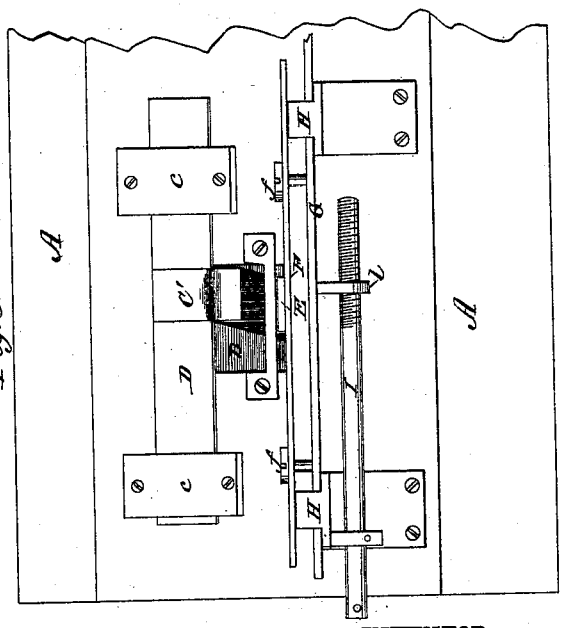


Fig. 3.



WITNESSES:

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INVENTOR:

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UNITED STATES PATENT OFFICE.

DAVID ENGLAR, JR., OF AVONDALE, MARYLAND.

IMPROVEMENT IN GUANO-DISTRIBUTERS.

Specification forming part of Letters Patent No. **210,310**, dated November 26, 1878; application filed November 4, 1878.

To all whom it may concern:

Be it known that I, DAVID ENGLAR, Jr., of Avondale, in the county of Carroll and State of Maryland, have invented a new and Improved Guano-Distributer; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention is an improvement in force-feed guano-distributers; and consists in the employment of a cam-grooved cylinder, located and revolving in the hopper of the machine, and two plates—namely, a clearer and discharge-regulator—which project up through the bottom of the hopper, and are reciprocated horizontally as they follow the cam-groove. The guano is removed from the cam-groove by means of the clearer, and falls into the tube or spout, which conducts it into the furrow in rear of the hoe or shovel. The regulator is made adjustable vertically by means of a slide and set-screw, for the purpose of varying the size of the opening in the bottom of the hopper, and thereby adapted for regulating the discharge of guano.

In the accompanying drawing, Figure 1 is a longitudinal vertical section of a portion of the hopper provided with my improved attachment. Fig. 2 is a transverse section on line *x x* of Fig. 1. Fig. 3 is a bottom-plan view. Fig. 4 is a detail view of the cam-cylinder detached.

A indicates the box or hopper in which the guano is placed, and from which it is discharged through a slot, *a*, in the bottom. A cam-grooved cylinder, B, is fixed on a rotating shaft, C, immediately over said slot. In practice, the hopper is made of such length as to have eight such slots and cam-grooved cylinders. A portion of the guano in the hopper is continually entering the cam-groove *b*, and as the cylinder rotates it is carried along by reason of friction with the irregular or inclined sides of the different sections or divisions of the groove.

To remove from the groove the guano thus impacked or held in it, I employ a plate, C′, which projects up through the slot in the hopper, and is attached to a horizontal sliding bar, D, that works in keepers *c*, attached to the under side of the hopper. The plate C′ projects into the groove to the full depth of the latter, and is also of the same width.

It will be apparent that as the cylinder B rotates, the clearer C′ will follow the groove, and thus cause the endwise reciprocation of the bar D, to which it is secured.

The device for regulating the discharge of the guano from the groove *b* is a plate, E, which is constructed and arranged in the groove similarly to the clearer C′, but located opposite to the same, and at a distance of an inch or more, so as to allow the free delivery of the guano downward between them. The plate E is attached to a bar, F, which, like the bar D, is reciprocated as the cylinder rotates by reason of the plate following the sinuosities or angles of the groove *b*.

Said bar F is supported horizontally and guided in its reciprocations by screws *f*, which pass through horizontal slots *g*, and enter an auxiliary slide or bar, G, that is supported in slotted pendent arms or guides H, and placed parallel to the regulator-slide F.

The regulator E is adjusted vertically by adjusting the bar G. For this purpose the latter is provided with diagonal slots *i*, through which the pins *k* pass. The adjustment is effected by means of a screw, I, which is swiveled to one of the guides H, and works in a lug, *l*, that projects from the auxiliary slide. By turning the screw I to the right the bar G is moved to the left, and the plate is thereby lowered, thus widening the opening between the upper end of the regulator E and the bottom of the groove *b*, and allowing a freer discharge of the guano. By turning the screw to the left the bar G is adjusted endwise to the right, and the regulator E thereby raised, thus narrowing the opening between the end of the regulator and the bottom of the groove *b*, and reducing the discharge of the guano correspondingly. The guano thus discharged enters a tube or conductor, (not shown,) through which it passes into the furrow behind the hoe or plow.

The auxiliary slide G, in practice, extends the whole length of the drill; but a separate regulating-slide, F, and clearer or scraper slide D is provided for each cylinder and discharge-slot of the hopper.

What I claim is—

1. In combination with the hopper and the cylinder having a cam-groove, and located with-

in the hopper, the clearer or scraper plate C′ and a movable bar, D, to which said plate is attached, as shown and described.

2. In combination with the hopper and cam-grooved cylinder, the regulator E and the horizontally-sliding bar F, to which said regulator is attached, and with which it reciprocates as the cylinder revolves, as shown and described.

3. In combination with the hopper and cam-grooved feed-cylinder, the regulator E, working in the groove, the horizontally-slotted bar F, and the diagonally-slotted bar or auxiliary slide G, and pins *k*, which pass through the diagonal slots *i*, substantially as specified.

4. The combination of the swiveled adjusting-screw with the auxiliary slide G, having a lug, *l*, through which the screw passes, and provided with diagonal slots *i*, the slotted guides H, the pins *k*, passing through said slots, the reciprocating regulator-slide F, and the grooved feed-cylinder, all as shown and described.

The above specification of my invention signed by me this 22d day of October, 1878.

DAVID ENGLAR, JR.

Witnesses:

SOLON C. KEMON,

CHAS. A. PETTIT.