A. DICK.

Corn-Planter.

No. 219,624. Patented Sept. 16, 1879.

Fig. 1.

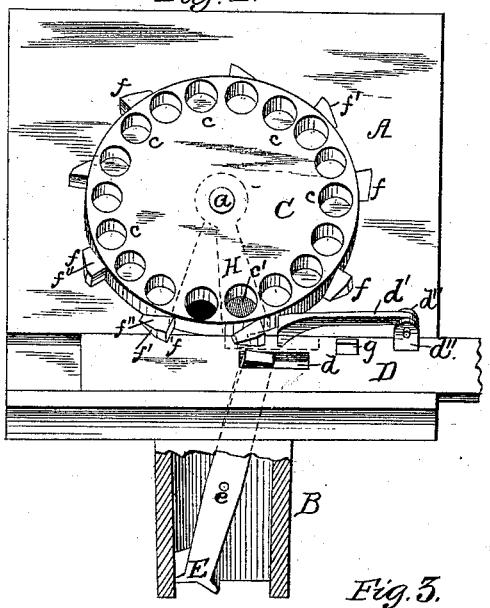


Fig. 2.

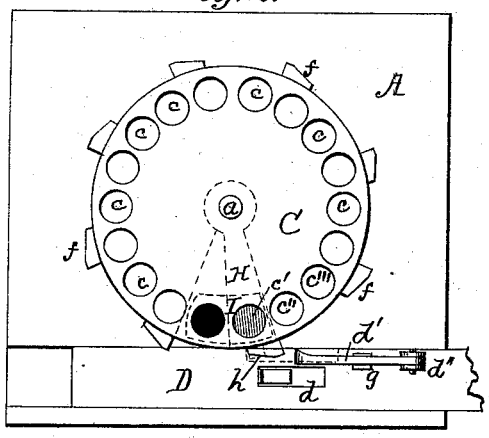


Fig. 3.

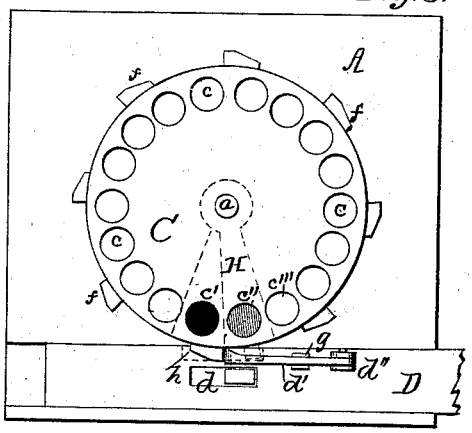


Fig. 4.

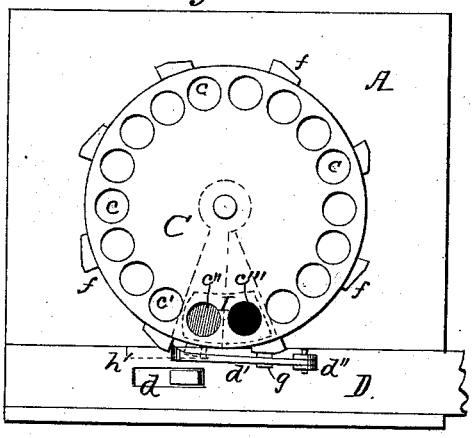
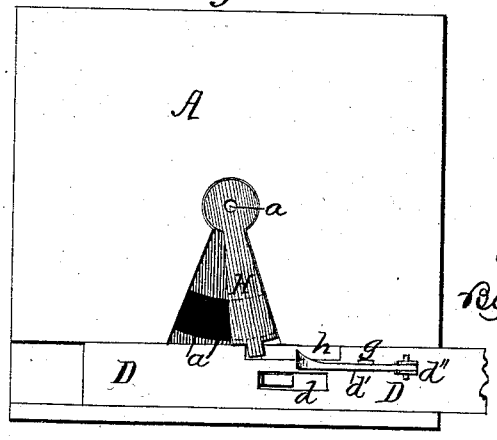


Fig. 5.



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UNITED STATES PATENT OFFICE.

ADAM DICK, OF MOLINE, ILLINOIS.

IMPROVEMENT IN CORN-PLANTERS.

Specification forming part of Letters Patent No. **219,624**, dated September 16, 1879; application filed August 16, 1879.

To all whom it may concern:

Be it known that I, ADAM DICK, of Moline, in the county of Rock Island and State of Illinois, have invented certain new and useful Improvements in Corn-Planters; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification, in which—

Figure 1 is a perspective view, showing the bottom of a seed-box, the seed-plate and its actuating mechanism, and the seed-tube, with its rear end removed to show the valve located therein. Figs. 2, 3, and 4 are top-plan views, showing the parts in different relative positions. Fig. 5 is a top-plan view of the parts shown at Fig. 1, with the seed-plate removed.

This invention relates to corn-planters of that class in which a rotating disk with seed-cups or holes through it is used to measure the charges of seed for delivery to the seed-tube.

In planters of this class as heretofore constructed the charges of seed have been delivered directly from the seed-cups in the rotating disk to a single or a double valve in the seed-tube when the seed-cups were brought over the throat of the seed-tube.

The important feature in my invention consists in the use of an oscillating slide, actuated by the slide-bar which actuates the rotating seed-disk, and adapted to act as a sliding bottom for the seed-cups of the rotary disk.

The invention further consists in constructions and combinations hereinafter described, and set forth in the claims hereto annexed.

In the following description the drawings are referred to by letters, the same reference-letter indicating the same part in the different views, and when the word "figure" is used it refers to a figure of the drawings.

A represents the bottom of a corn-planter seed-box; B, the seed-tube, for conducting the seed to the ground; C, the rotating disk, pivoted at *a* to the bottom A, and provided with an orbital series of holes or seed-cups, *c*; D, the slide, which extends from one-seed-box on the planter to another, and actuates the dropping devices in both; and E, the discharging-valve in the seed-tube, pivoted at *e*, and its upper end located in a slot, *d*, in the slide D, so that it will be vibrated in one direction by every throw of the slide.

The foregoing parts referred to by letter may be constructed and operated in any ordinary manner, except as hereinafter described.

The disk C has lugs *f* projecting from its outer edge, with vertical radial faces *f'* and upper sloping faces, *f''*; and the slide D has a gravitating pawl, *d'*, pivoted at one end to standard *d''* on said slide.

When the slide D is given a throw forward in the direction shown by the arrow at Fig. 2, the pawl *d'* will engage the vertical face of a lug, *f*, and give the disk C a partial rotation. When the slide is given a backward throw in the opposite direction to that last described, the pawl will be drawn back and rise over the sloping face of a lug, *f*, and as it reaches the end of its throw the pawl *d'* will fall behind the same lug into position to again act on the disk C by another forward throw of the slide.

The coacting devices to give motion to the disk C by the slide D may be such as described, or may be of any desired kind having the same functions—of giving a partial rotation to the disk C always in the same direction by each forward movement of the slide, and allowing the disk to remain at rest during the return or backward throw of the slide, and giving the disk one-half the number of partial rotations to complete a full rotation that there are seed-cups in the disk. A stop, *g*, projecting from the slide D, is brought against a lug, *f*, and acts as a stop to prevent the momentum of the disk carrying it too far when acted on by the pawl *d'*.

H is a vibrating plate or seed-cup bottom, pivoted at one end to the stud on which the disk C is journaled, and its other end projecting radially to the disk C. The upper side of the bottom H is flattened, so as to fit closely against the bottom of said disk, and is of such width, where it comes beneath the seed-cups, as to cover the open bottom of one cup. The outer end of the seed-cup bottom H extends beyond the disk C into a recess or notch, *h*, in the under side of the slide D, as shown by dotted lines in the drawings, so that the bottom H will be given a vibration in one direction at each throw of the slide D.

The seed-box bottom A has a discharge-

opening, a', located beneath the orbital path of the seed-cups c and over the open upper end of the seed-tube B, and of a width such as will embrace two of said seed-cups.

The seed-cup bottom H vibrates in the opening a' when the seed-box bottom forms the bottom for the seed-cups not over the opening a', as shown in the drawings; but in case the disk C rotated on an annular plate beneath the seed-cups, as in some planters, then the plate H might be placed above the seed-box bottom A and between it and the disk C.

An ordinary cap (not shown in the drawings) may be used over the disk C, to prevent the seed in the seed-box coming in contact with the disk C outside of the seed-cups, and a cut-off, I, may be used of any ordinary form, except that it should cover two seed-cups, as shown by broken lines at Fig. 2.

At Figs. 1 and 2 the slide D is shown in position to commence its forward throw, the valve E being in the position shown, and the seed-cup bottom H drawn back and resting beneath the seed-cup c', which seed-cup is over the opening a' and under the cut-off, as shown by dotted lines at same figure.

The slide D, in making the first half of its forward throw, will allow the sliding bottom H to remain at rest by reason of the elongated recess h, and will rotate the disk C far enough to carry the seed-cup c' from over the slide H and bring the charged cup c'' over said slide H, as shown at Fig. 3.

The last half of the forward throw of the slide D will carry the slide H along with the seed-cup c'' to the position shown at Fig. 4, and will bring the seed-cup c''' under the cut-off I and over the opening a', where it will discharge its contents, which will be received and retained at the lower end and right-hand side of the valve E, which will at the time be in the position shown by dotted lines at Fig. 1.

The return or backward throw of the slide D will not move the disk C, but will move the valve E to the position shown by full lines at Fig. 1, and thus discharge the seed from its right-hand side and lower end to the soil, and place it in position to receive on its left-hand side and lower end the charge which was held in the seed-cup c'' by the sliding bottom H, and which charge was released by the slide H being withdrawn from beneath the cup c'' by the backward throw of the slide D, which backward throw carries the slide H again back to the position shown at Fig. 2, and in position ready to repeat the operations described.

The charge of seed at the left-hand side and bottom of the valve E is discharged by the backward throw of the slide E.

It will thus be seen that the throw of the slide D in each direction vibrates the valve E in one direction, and also vibrates the sliding seed-cup bottom H in one direction, and the movement of the slide D before its action on the sliding bottom H in its throw in each direction allows said sliding bottom to act in retaining the seed in one seed-cup, to be carried forward with the partial rotation of the disk and discharged while the disk is at rest, and by the return or backward throw of the slide D and seed-cup bottom H.

It is not deemed necessary to show here another similar seed-box and dropping devices at the other end of the slide D, in which case the seed-cup disks at both ends may be made to rotate in the same direction, so that the movements of said disks will be simultaneous.

What I claim as new is—

1. In combination with a seed-cup disk having an intermittingly-rotating motion in one direction imparted to it by a slide, D, which acts upon it by its throw in one direction, and allows it to remain at rest while its throw is effected in an opposite direction, a vibrating slide, H, adapted to move with the forward movement of the slide D and seed-cup disk, and act as a bottom to a seed-cup, and to be removed from beneath said seed-cup by the backward movement of the slide D, to allow the seed to be discharged from said cup.

2. In combination with an intermittingly-rotating seed-cup disk in which two seed-cups are brought beneath the cut-off at each movement of the disk, a sliding bottom adapted to hold the seed in one seed-cup while another discharges its seed, and to be moved from beneath the seed-cup which it closes, to allow it to discharge its contained seed while the seed-cup disk is at rest.

3. In combination with the intermittingly-rotating seed-cup disk C and sliding seed-cup bottom H, the slide D, adapted to give a a partial rotation to the disk C by its alternate throws, and to move before its action on the slide H at each throw, so as to properly place, retain, and remove said slide in relation to one of the seed-cups.

4. In combination with the intermittingly-rotating seed-cup disk C and slide D, which acts upon it at alternate throws of the slide, the sliding seed-cup bottom H and valve E, arranged to operate in relation to each other and to the seed-cup disk, substantially as and for the purpose specified.

5. In combination with the seed-cup disk C and slide D, alternate throws of which act on said slide, a sliding seed-cup bottom located close beneath the seed-cup disk, and a vibrating valve located in the seed-tube, both of which are vibrated in one direction at each throw of the slide D, substantially as and for the purpose specified.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

ADAM DICK.

Witnesses:

HERMAN E. DICK,

S. R. CLARK.