2 Sheets—Sheet 1.

A. B. DICK.

Corn-Planter.

No. 213,397. Patented Mar. 18, 1879.

Fig. 1.

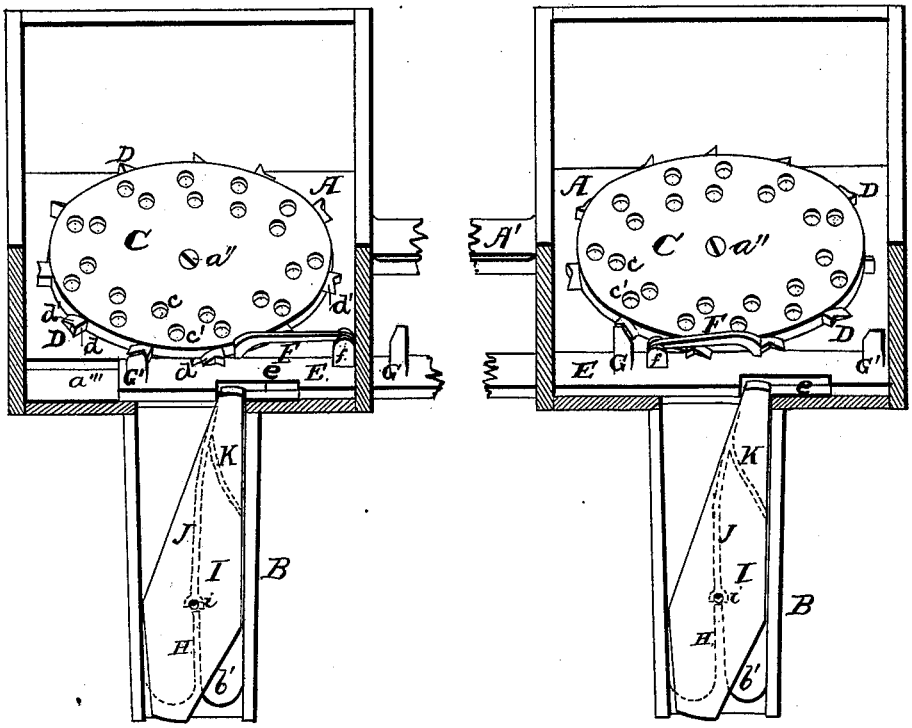


Fig. 3.

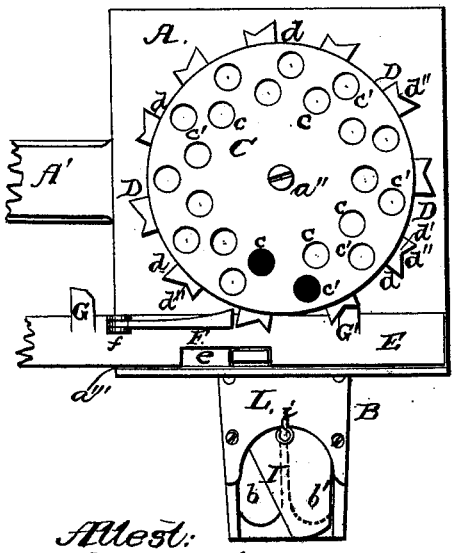
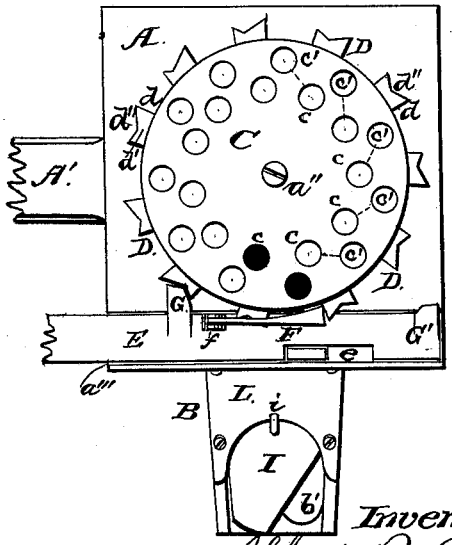


Fig. 2.



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Atty.

2 Sheets—Sheet 2.

A. B. DICK.
Corn-Planter.

No. 213,397. Patented Mar. 18, 1879.

Fig. 4.

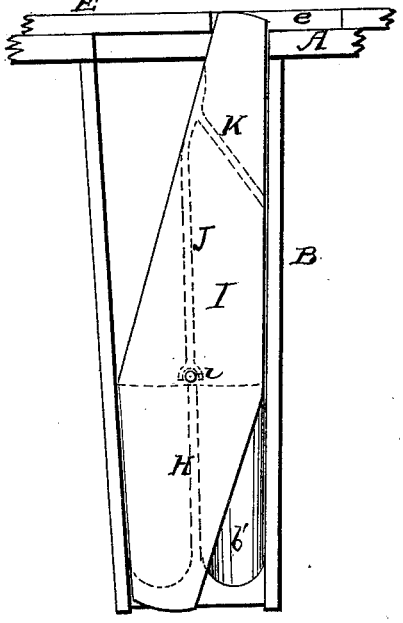


Fig. 5.

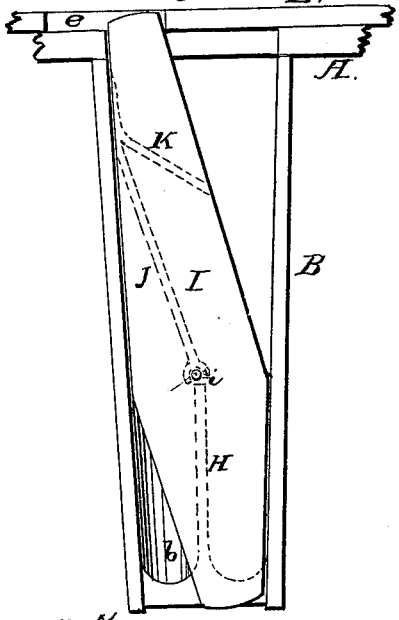


Fig 6.

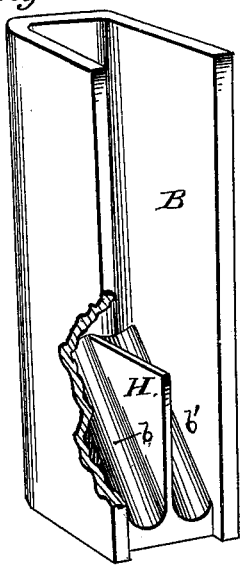


Fig. 7.

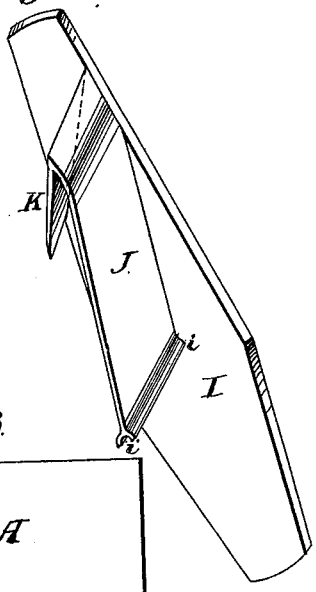
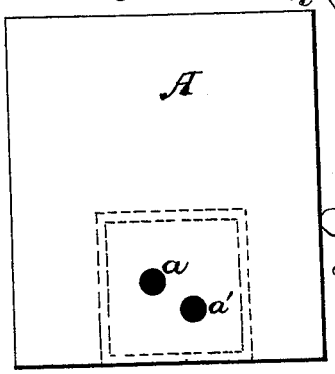


Fig. 8.



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UNITED STATES PATENT OFFICE

ALBERT B. DICK, OF GALESBURG, ILLINOIS.

IMPROVEMENT IN CORN-PLANTERS.

Specification forming part of Letters Patent No. **213,397**, dated March 18, 1879; application filed December 23, 1878.

To all whom it may concern:

Be it known that I, ALBERT B. DICK, of Galesburg, in the county of Knox 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 sectional view in perspective, the caps of the seed-wheels and the upper parts of the seed-boxes broken away to show the working parts. Fig. 2 is an enlarged top-plan view of the parts as shown at the right-hand side of Fig. 1, with the seed-tube back in place. Fig. 3 is a similar view to Fig. 2, but the parts in different positions. Fig. 4 is an enlarged rear elevation of the parts as shown at Fig. 2, and the back of the seed-tube removed. Fig. 5 is an enlarged rear elevation, same as Fig. 4, but showing the parts in same relative positions as Fig. 3. Fig. 6 is a perspective view of the seed-tube alone, its rear side and part of its left-hand side broken away to show its interior construction. Fig. 7 is a detail perspective view of the valves in the seed-tube alone, and with their front sides turned rearward. Fig. 8 is a top-plan view of the bottom of one seed-box.

In corn-planters having a rotary seed-cup disk in each of two seed-boxes, actuated by a reciprocating bar, as heretofore constructed, an impulse forward was given to each disk by both the forward and return movements of the reciprocating bar.

One feature in my invention consists in combining and constructing the reciprocating bar and seed-cup disks in such manner that a forward movement of the bar will give a forward movement to one seed-cup disk, which disk will remain stationary while the bar is given a return movement to actuate the seed-cup disk at its other end.

Another feature in my invention consists in a seed-cup disk which measures and delivers to the seed-tube two charges of seed at each impulse it receives from the reciprocating bar; and a further feature consists in a seed-cup disk and reciprocating bar so constructed and arranged that the disk is given an impulse by each alternate throw of the bar, and measures and discharges two charges of seed, and remains stationary during the alternate throws thereof, in combination with a valve or valves in the seed-tube, which are oscillated or vibrated at every throw of the reciprocating bar, so that a charge of seed may be discharged from the seed-tube at every throw of the reciprocating bar.

The invention further consists in the construction and arrangement of parts hereinafter described, and set forth in the claims hereto annexed.

Referring to the drawings by letters, similar letters indicating similar parts, letter A represents the bottom of the seed-box, of which bottoms and seed-boxes there are two, not differing in construction or in the manner of being seated on the planter, and connected by a bar, A′, from an ordinary two-row corn-planter seed-box and bottom, except that each bottom A has two openings, *a a′*, over the seed-tube B, one on each side of the center of the seed-tube. C is a seed-cup disk, journaled at its center on a stud-bolt, *a″*, above the bottom A, and contains apertures or seed-cups, in pairs, *c c′*, each pair located so as to register a cup, *c* or *c′*, with an opening, *a* or *a′*, respectively, as the disk C is rotated to bring the pairs of cups successionally over said openings. Each disk C has projections D from its periphery. The projections D correspond with the number of pairs of seed-cups *c c′*, and each projection is constructed, as shown in the drawings, with a vertical face, *d*, sloping face *d′*, and a V-shaped notch, *d″*, in its outer end.

E is the bar for actuating the disks C, and extends across the machine, and may be reciprocated by the ordinary hand-lever, or by any other suitable means, and works in suitable grooves *a‴* in the bottom A, and at one side of the disks C. F is a pawl, pivoted at one end between standards *f*, projecting upward from the bar E, and in such position that when the bar E is thrust forward the free end of the

pawl F will abut against the vertical side of one of the projections D and rotate the disk C one-eleventh of a revolution, (there being eleven projections, D,) and by this partial rotation bring a pair of seed-cups, *c c'*, to register with the openings *a a'*.

When the bar E reaches the end of its throw last described, a detent, G, which projects laterally therefrom, will strike one of the projections D, and, resting in the V-shaped recess in its end, as shown at Fig. 2 of the drawings, will arrest the motion of the disk C, and also prevent backward rotation thereof from the jarring of the machine or any other accidental cause. As the bar E is thrown in the other direction, to make its return throw, the pawl F, last described, will rise over the sloping side of the projection D next in rear of the one last acted on, and when said bar E reaches the end of its return throw the pawl F will drop behind the projection D over which it passed, and be ready for action thereon, as hereinbefore described, at the next forward movement of the bar E.

When the bar E reaches the end of its return throw, as last described, a projecting detent, G', will rest in the V-shaped end of one of the projections D, as shown at Fig. 3 of the drawings, and arrest and prevent the forward motion and prevent backward motion of the disk C from accidental causes.

It will be seen that the return throw of the bar E did not impart any movement to the disk C at the end of the bar E described, and that the pawls F at the two ends of the bar E, pointing in opposite directions, will act on the disks C alternately.

H is a plate extending from front to rear side, and dividing the lower end of the seed-tube into two passages, *b b'*, each sloping outwardly at its lower end, as shown plainly at Fig. 6, and terminated in the same vertical plane as the outer edge of the division-plate H.

I is the discharge-valve, formed as shown in the drawings, and pivoted at *i*, with its axis of oscillation at the upper end of the division-plate H, and placed so that its plane of oscillation is on the rear side of the plate H, and so that it will open and close the lower ends of the passages *b b'* alternately as it is oscillated by the bar E, which has a notch, *e*, in its side to receive the upper end of the valve I, and give it motion at every throw of the bar E.

J is a seed-guide plate, attached to the inner side of the valve I, extending from the pivot-point *i* upward, as shown in the drawings, and from the valve I to the front wall of the seed-tube.

K is a seed-detaining valve, attached to the inner side of the valve I, and placed as shown in the drawings, and extending from the valve I, to which it is attached, to the front side of the seed-tube.

L is the back of the seed tube, which covers the valve I from the top of the seed-tube downward to the pivot *i*.

Ordinary caps and cut-offs are used over the disks C and ordinary seed-boxes, neither of which are shown in the drawings.

A description, as follows, of the operation of the devices at the right-hand side of Fig. 1 of the drawings will illustrate the operation of both sides.

When the bar E is thrust forward to carry the disk C to the position shown at the right-hand side of Fig. 1 and at Fig. 2, two charges of seed will be measured and discharged simultaneously to the seed-tube from a pair of seed-cups, *c c'*. The charge from the cup *c*, passing down on one side of the guide J, will be retained at the bottom of the tube *b* by the discharge-valve I, and the charge from the cup *c'* will drop into and be detained in the pocket formed between the detaining-valve K and the side of the seed-tube. The return movement of the bar E will not act on the disk C, nor discharge any seed therefrom, but will act on the valve I, and carry it to the position shown at Fig. 3 of the drawings, thereby discharging the seed from the tube *b*, and allowing the seed held by the valve K to drop to the lower end of the tube *b'*, where they are retained by the valve I until the next forward movement of the bar E discharges them, and again drops a charge into the tube *b* and another to the valve K.

It will thus be seen that the valve I discharges a quantity of seed at every throw of the bar E, without any devices to communicate a forward movement to the disk C by the return movement of the bar E.

What I claim as new is—

1. In a corn-planter, two seed-cup disks, C, in combination with a reciprocating bar, E, with actuating devices which give a partial rotation to one disk, while the other remains stationary as the bar E is given its throw to the right hand, and as it is given its throw to the left hand the hitherto stationary disk is partially rotated, and the other remains stationary, substantially as and for the purpose specified.

2. In combination with a reciprocating bar, E, seed-cup disks C, having seed-cups in pairs, *c c'*, arranged to discharge simultaneously at every alternate throw of the bar E, substantially as and for the purpose specified.

3. In a corn-planter, the combination of a seed-cup disk with an actuating-bar, which imparts movement to the seed-cup disk at every alternate throw of the actuating-bar, and with a valve or valves in the seed-tube, to which movement is imparted by every throw of the actuating-bar.

4. In combination with a valve or valves in the seed-tube which discharge a measured quantity of seed at every movement, a seed-cup disk which measures and delivers simultaneous dual discharges of seed at every alternate movement of said seed-tube valve, and a bar by which both are actuated, substantially as and for the purpose specified.

5. In combination with a seed-tube divided at its lower end by a plate, H, a discharge-

valve, I, having a guide-flange, J, to direct the seed to either side of the plate H, as and for the purpose specified.

6. In combination with a seed-tube and a discharge-valve, I, a detaining-valve, K, arranged above the lower end of the discharging-valve I, and adapted to hold alternate charges of seed, and deliver the same to the discharging-valve, substantially as and for the purpose set forth.

7. The discharging-valve I, having a valve, K, for holding alternate charges of seed, and delivering the same to the discharging-valve, in combination with a seed-tube, and with a seed-cup disk, C, having dual seed-cups which discharge simultaneously, substantially as and for the purpose specified.

8. In combination with the bar E, the detents G G′ and seed-cup disks C, having projections D, with V-shaped recesses in their ends, in which said detents act to arrest and prevent forward motion and prevent backward motion of the disks, substantially as described, and for the purpose specified.

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

ALBERT B. DICK.

Witnesses:
ADAM DICK,
P. R. RICHARDS.