

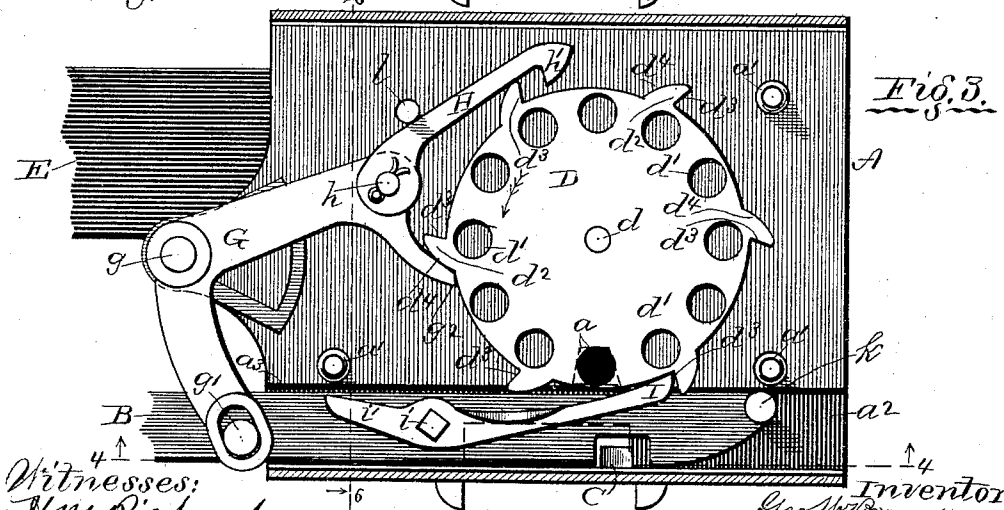
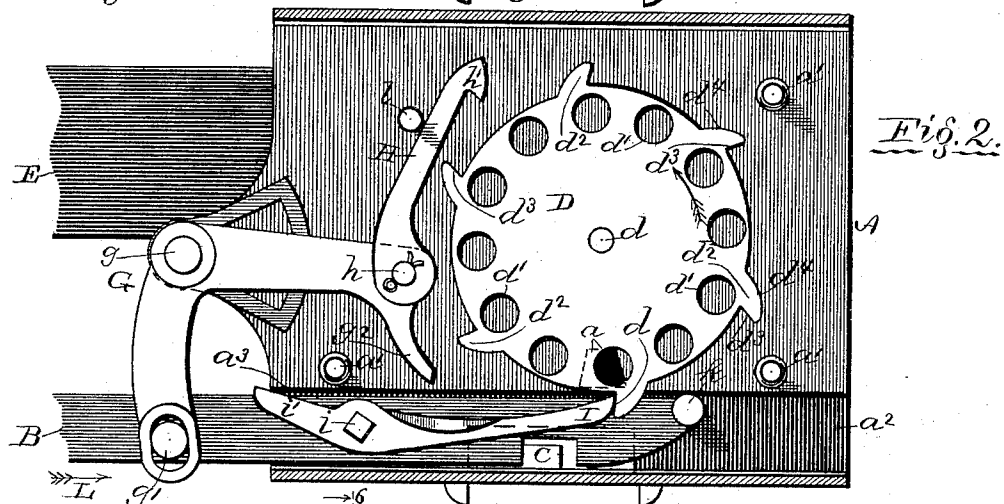
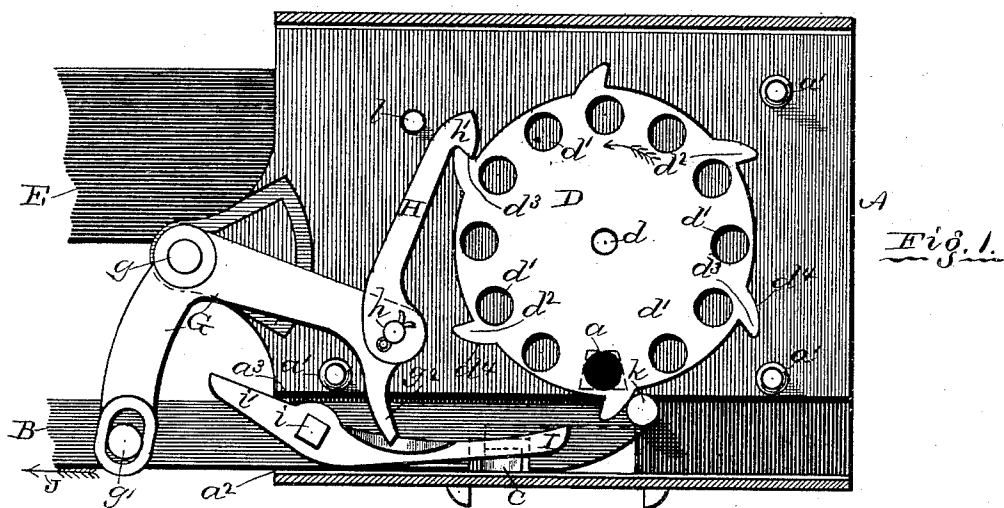
(No Model.)

2 Sheets—Sheet 1.

G. W. BROWN.
CORN PLANTER.

No. 474,363.

Patented May 10, 1892.



Witnesses:
H. M. Richards,
W. H. H. H. H.

Inventor:
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By W. H. H. Richards, atty.

(No Model.)

2 Sheets—Sheet 2.

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Fig. 4.

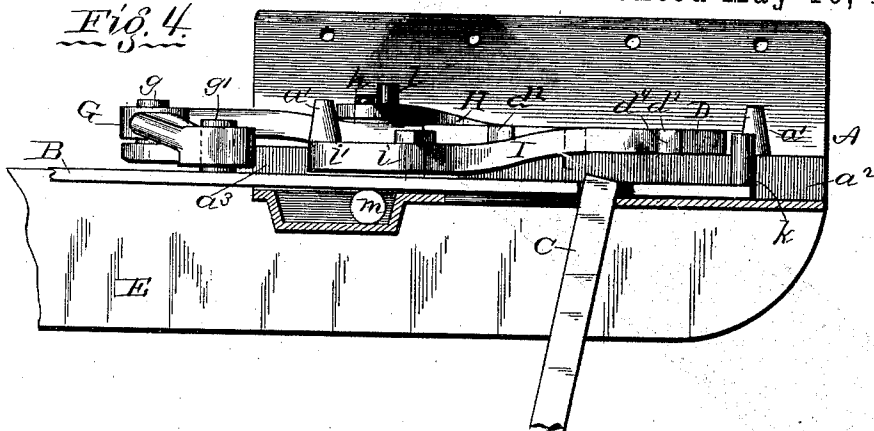


Fig. 5.

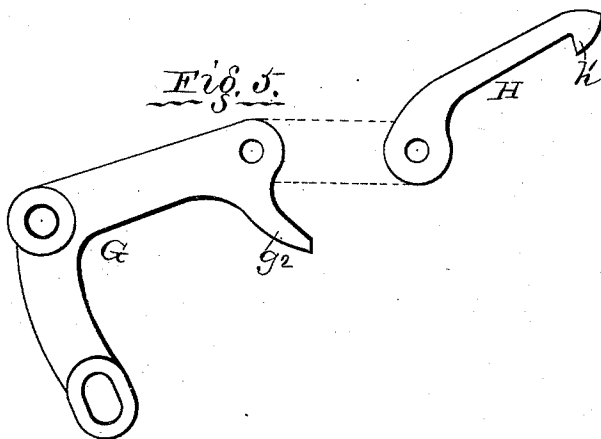
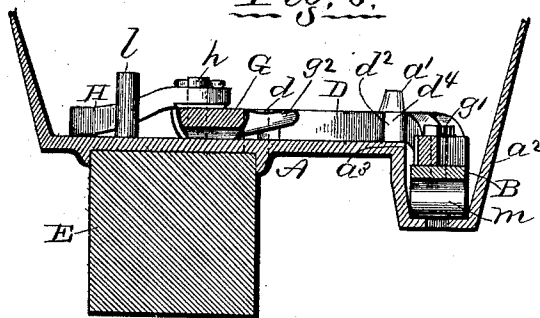


Fig. 6.



Witnesses:

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UNITED STATES PATENT OFFICE.

GEORGE W. BROWN, OF GALESBURG, ILLINOIS.

CORN-PLANTER.

SPECIFICATION forming part of Letters Patent No. 474,363, dated May 10, 1892.

Application filed February 10, 1892. Serial No. 420,958. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. BROWN, a citizen of the United States, residing at Galesburg, in the county of Knox and State of Illinois, have invented certain new and useful Improvements in Corn-Planters, of which the following is a specification.

This invention relates to that class of seed-measuring devices in the seed boxes or hoppers of corn-planters known in the trade as "rotary droppers" and to that type of rotary droppers in which a reciprocating slide-bar is used to impart an intermittent rotary motion in one direction to a disk having perforations or seed-cups in a circular series concentric with its axis of rotation; and the invention has reference particularly to improvements on the means shown and described in Letters Patent No. 215,207, issued to me May 13, 1879, for transmitting such intermittent rotary motion in one direction to a seed-cup disk from a reciprocating movement of a slide-bar; and the main object of my invention is to provide means for said purpose which shall be strong, easy to adjust and operate, economic of manufacture, positive in movements, and simple in construction.

To the foregoing main end and object my present invention may be said to consist in the novel structural features and combinations of devices which are hereinafter more particularly described and which constitute the subject-matter of the claims hereto appended.

Mechanism embodying the structural peculiarities of the different parts and the organization of said parts in the combinations forming the subject-matter of my improvements is illustrated in the accompanying drawings, in which—

Figure 1 is a top plan of the bottom part of the seed-box with the cap-plate removed to show the operating parts below it, consisting of the seed-cup disk, part of the slide-bar, the mechanism for transmitting motion from the slide-bar to the seed-cup disk, and also to show other adjacent parts hereinafter described; Fig. 2, a top plan of same parts shown at Fig. 1, but the operating parts changed in their relative positions from that shown at Fig. 1 by a partial movement of the slide-bar; Fig. 3, a top plan of same parts shown at Fig.

1, but the operating parts changed in their relative positions from that shown at Fig. 1 by a full movement of the slide-bar; Fig. 4, a sectional elevation of the parts shown at Figs. 1, 2, and 3 in the line 4 4 in Fig. 3; Fig. 5, a plan of details hereinafter described; Fig. 6, a sectional elevation of parts shown at Figs. 1, 2, and 3 in line 6 6 in Fig. 3.

The seed-box bottom A, with opening *a* to the seed-tube and lugs or posts *a'* for supporting the cap-plate, (not shown,) the reciprocating bar B, which is adapted to slide endwise of itself in a groove *a*² in one side of the bottom A, the lower valve C, which is operated by the slide-bar B and discharges the seed near the lower end of the seed-tube, the seed-cup wheel D, journaled on a stud-bolt *d* and provided with a series of seed-cups *d'* and a series of teeth *d*², each tooth having an approximately radial side *d*³ and an inclined side *d*⁴, and the bar E, which constitutes a part of the planter-frame to which the seed-box is fixed, are parts of an ordinary rotary drop-planter and will be understood without full description herein.

The elbow-lever G is substantially the same structurally and is pivotally connected at its bend or angle by a stud-pivot *g* to a projecting part of the bottom A and is pivotally connected at one end by a stud-pivot *g'* to the slide-bar B and has its other end bent and adapted to act as a detent *g*² substantially the same as the elbow-lever H of my patent hereinbefore referred to. One end of a pawl H is pivotally connected by a stud-pivot *h* with one arm of the lever G near where said arm is bent to form the detent *g*², and the other end of said pawl is in the form of a hook *h'* to adapt it to act as a full pawl, as hereinafter described.

The push-pawl I is pivotally connected at *i* to the slide-bar B and is extended past said pivotal point to form a cam-bar *i'*, which is preferably an integrant part of the pawl I. A lug *k* projects upwardly from the end of slide-bar B and another lug *l* from the seed-box bottom, for purposes hereinafter described. It will be understood that the seed-box partly shown is the one at the right-hand side of a machine having two seed-boxes for dropping two rows of corn at each passage of the machine and that the slide-bar ex-

tends, as not shown, across the machine to operate the seeding mechanism in the other seed-box. (Not shown.)

At Fig. 1 the working parts are shown in the relative positions into which they have been brought when the slide-bar B has been given a complete throw toward the left-hand side of the planter or in the direction shown by the arrow J. Assuming the working parts then to be in the relative positions shown at Fig. 1, the slide-bar B will next be given a throw in the direction of the arrow L, (shown at Fig. 2,) or toward the right-hand side of the machine, and such throw of the slide-bar is shown at Fig. 2 as partially made or made to about one-half of its full distance, and in moving to the right, as last described, it will be seen at said figure that the cam end i' of the pawl I, coming into contact with the side wall a^3 of the groove a^2 in the seed-box bottom and sliding thereagainst, has forced the pawl I toward the seed-cup disk and into contact with the radial side d^3 of a tooth d^2 . In continuing this throw to the right to its completion, as shown at Fig. 3, the pawl I will be prevented from any disengagement with the tooth d^2 by the cam i' and wall a^3 , and said pawl will, acting on said tooth, give a partial rotation to the seed-cup disk, and thereby bring one of the seed-cups d' into coincidence with the opening a (shown by dotted lines) to the ordinary seed-tube (not shown) and beneath any ordinary cut-off (not shown) for the discharge of its contained seed in the ordinary manner. In completing this movement toward the right-hand side of the machine the pawl H is moved forwardly of itself by the oscillatory movement of the elbow-lever G, and coming in contact with the lug l is forced thereby into the position shown at Fig. 3, with its hook-shaped end h' in the line of the circular path of the teeth on the seed-cup disk, and the detent g^2 is brought at the completion of said throw of the slide-bar into contact with the inclined side d^4 of a tooth, and thereby arrests the further movement of the seed-cup disk that might occur from its momentum, and the detent g^2 will also now lock and hold the seed-cup disk from any backward movement and the pawl I lock and hold it from any forward movement which might arise from swerving or jolting of the planter.

In making the return throw of the slide-bar or throw toward the left-hand side of the machine from the position shown at Fig. 3 the pull-pawl H will be drawn backwardly by the oscillatory movement of the elbow-lever G, and its hook-shaped end h' , engaging with a tooth on the seed-cup disk, will give another impulse and partial rotation to the seed-cup disk in the same direction as hereinbefore described, and on completion of said throw the parts will be brought into the relative positions shown at Fig. 1, with a seed-cup coincident with the opening or aperture a for discharge of its seed. In completing the last-

described throw of the slide-bar the lug k on its end is brought into such a position that one of the teeth d^2 will strike it and prevent the momentum of the seed-cup wheel carrying said wheel past its proper position of rest, in which position of rest the seed-cup wheel is also locked and held by the lug k and pawl H, as shown at Fig. 1, until released by again moving the slide-bar toward the right-hand side of the machine for actuating the seed-cup wheel, as hereinbefore described.

The organization of the parts of my present invention, including the seed-cup disk, the slide-bar, and the intermediary actuating mechanism, is effective in operation, and there being no springs connected with any of the parts the movements of every part are positive. The structure and organization of the parts are also such that they can be easily, readily, and quickly removed from and replaced in the seed-box in their proper positions. The friction of the sliding bar B and the force required to operate it are minimized by the interposition of the roller m between its lower surface and the wearing-surface beneath it.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, substantially as hereinbefore described, of a toothed intermittent rotary seed-cup disk, a reciprocating slide-bar, an elbow-lever pivotally connected at its angle with a fixed part of the machine and having one of its ends pivotally connected with said slide-bar and its other end pivotally connected with one end of a pull-pawl, the other end of which is hook-shaped to adapt it to act as a pull-pawl, and a lug, such as l , adapted to force said pawl into engagement with the seed-cup disk at the alternate throws of the slide-bar for giving a partial rotation to said disk.

2. The combination, substantially as hereinbefore described, of a toothed intermittent rotary seed-cup disk, a slide-bar, and an elbow-lever pivotally connected at its angle with a fixed part of the machine and having one of its ends pivotally connected with said slide-bar and its other end pivotally connected with one end of a pawl, the other end of which is hook-shaped to adapt it to act as a pull-pawl for giving a partial rotation to the seed-cup disk at each alternate throw of the slide-bar.

3. The combination, substantially as hereinbefore described, of a toothed intermittent rotary seed-cup disk, a slide-bar, and a pawl hinged or pivotally connected with said slide-bar and having an end extended beyond said hinge or pivot as a cam-bar adapted to slide in contact with a fixed part and thereby force said pawl into contact with a tooth of the seed-cup disk at each alternate throw of the slide-bar.

4. The combination, substantially as hereinbefore described, with a toothed intermittent rotary seed-cup wheel and slide-bar, of

an elbow-lever pivotally connected at its angle with a fixed part of the machine and at one of its ends with said slide-bar and its other end g^2 adapted to act as a detent for arresting the movement of said wheel, a pull-pawl 5 hinged to one end of said elbow-lever, a detent l , adapted to act on said pull-pawl, a pawl hinged to the slide-bar and having a projecting rear end adapted to act as a cam in forcing said pawl into contact with the seed-cup 10 wheel, and a detent k , fixed to the slide-bar and adapted to arrest the movement of the seed-cup disk after each movement given it by the pawl H.

5. The combination, in a seed-dropping 15 mechanism, of a toothed intermitting rotary seed-cup disk D, slide-bar B, elbow-lever G, pivoted, as described, to the seed-box and to the slide-bar and provided with a detent end g^2 , a pawl H, lug l , pawl I, with cam-bar end 20 i , wall a^3 , and detent k , substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE W. BROWN.

Witnesses:

EUGENE W. WELCH,
H. M. RICHARDS.