2 Sheets—Sheet 1.

G. W. BROWN.

Corn-Planter.

No. 203,997. **Patented May 21, 1878.**

Fig. 1.

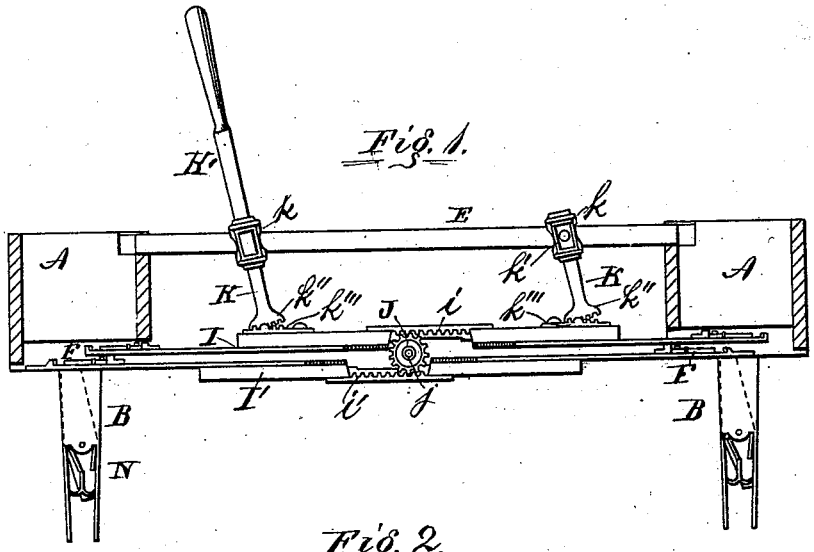
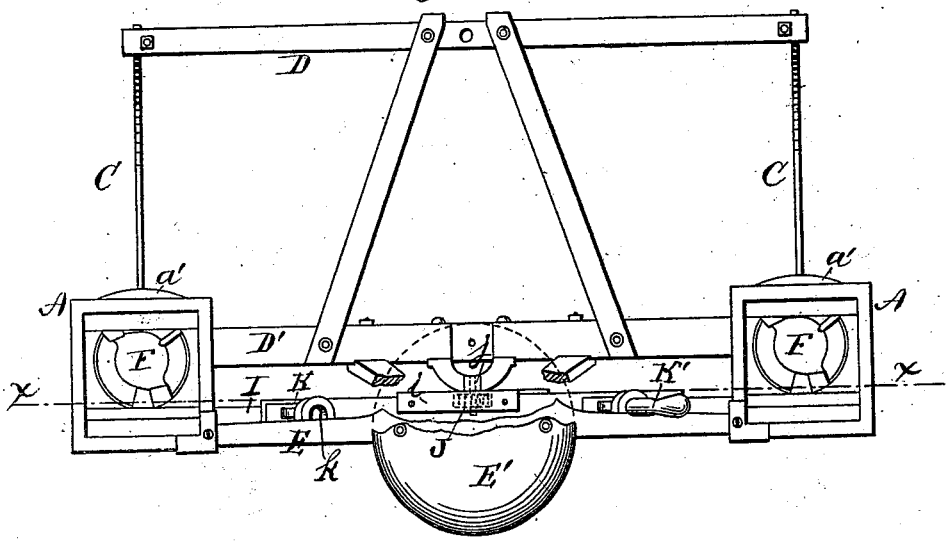


Fig. 2.



Witnesses:
M. H. Barringer.
J. S. Perkins.

Inventor:
Geo. W. Brown,
By W. B. Richards,
Atty.

G. W. BROWN
Corn-Planter.

No. 203,997. Patented May 21, 1878.

Fig. 3.

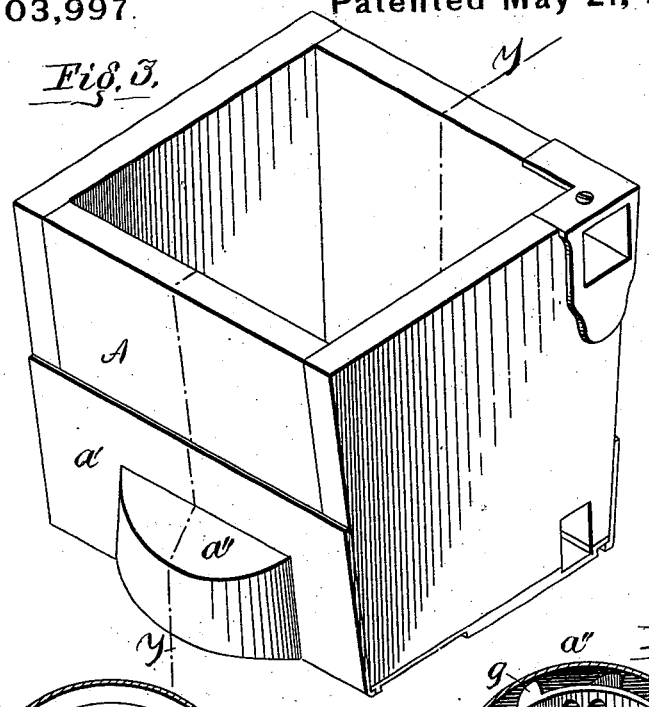


Fig. 4.

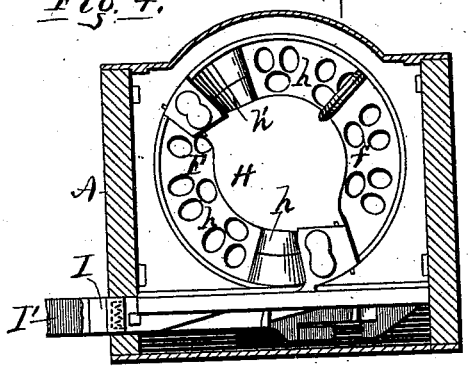


Fig. 5.

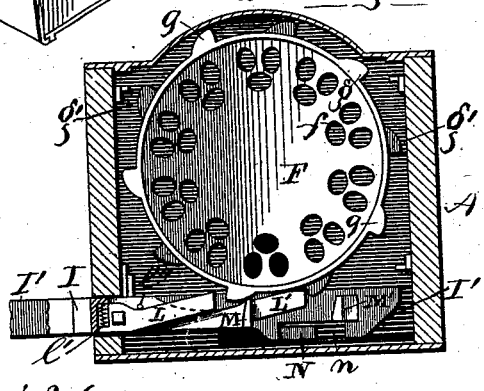


Fig. 6.

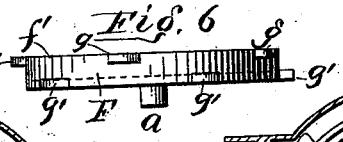


Fig. 7.

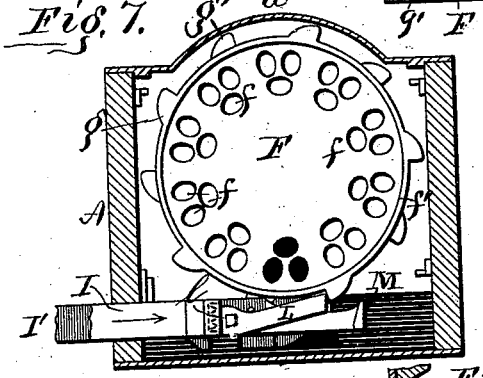


Fig. 8.

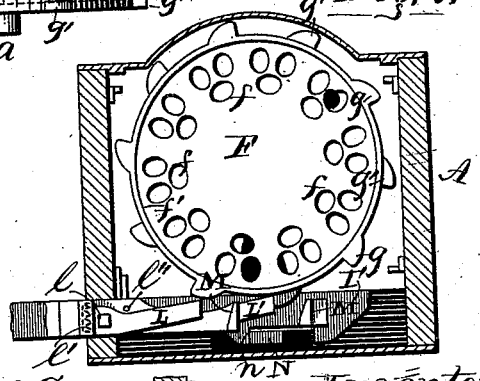
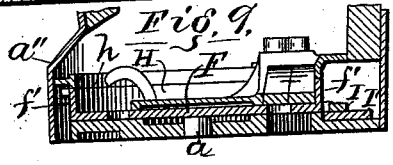


Fig. 9.



Witnesses:
W. H. Barringer.
J. S. Perkins

Inventor:
Geo. W. Brown,
By W. B. Richards,
Atty.

UNITED STATES PATENT OFFICE.

GEORGE W. BROWN, OF GALESBURG, ILLINOIS.

IMPROVEMENT IN CORN-PLANTERS.

Specification forming part of Letters Patent No. **203,997**, dated May 21, 1878; application filed January 4, 1878.

To all whom it may concern:

Be it known that I, GEORGE W. BROWN, 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 thereof, 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.

Figure 1, Sheet 1, is a vertical sectional view in the line *x x*, showing the rear side of Fig. 2. Fig. 2 is a top-plan view of the forward frame of a corn-planter embodying my invention. Fig. 3, Sheet 2, is a perspective view of a seed-box. Fig. 4 is a top view of Fig. 3, partly in section. Fig. 5 is the same view as Fig. 4, with the cap over the seed-cup wheel removed. Fig. 6 is a side elevation of the seed-cup wheel. Fig. 7 is the same view as Fig. 5, but the parts in different relative positions. Fig. 8 is the same view as Fig. 5, but the parts in different relative positions. Fig. 9 is a sectional view of the lower part of Fig. 3 in the line *y y*.

My invention relates to improvements in corn-planters of that class having rotary seed-cup wheels. In this class of corn-planters, as heretofore constructed, a single bar has been used to actuate the seed-cup wheels, involving complicated and more or less objectionable construction to adapt it to impart a forward movement to the seed-cup wheel by the rectilinear reciprocating movement of the bar.

The invention herein described consists, first, in the employment of an actuating-bar made in two parts, so geared to each other that a movement of either bar longitudinally in either direction will impart a longitudinal movement in the opposite direction to the other bar; second, in the use of pawls on each actuating-bar, which act alternately on projecting teeth to impart an intermittent rotary motion to the seed-cup plate by the alternate action of the actuating-bars; third, in the use of detents on each actuating-bar, so arranged that the detent on each bar will act as a stop to the seed-cup wheel to prevent its momentum carrying it too far when impelled by the pawl on the other bar; fourth, in the use of a seed-cup wheel having two sets of teeth in different planes, adapting them to be operated upon by two actuating-bars; fifth, in the combination of a lever with dual bars for actuating seed-cup wheels, connected so that oscillating said lever will propel one of the bars in one direction and the other in the opposite direction; sixth, in improvements in the method of fixing said lever in position; seventh, in a seed-box constructed with an enlarged lower portion, permitting the seed in the box to come in contact with all parts of the cap covering the seed-cup wheel and a small upper portion.

The invention further consists in certain details of construction and arrangement, hereinafter fully described.

Referring to the drawings by letters, A A represent the seed-boxes; B, the seed-tubes; C, the runners; D and D′, respectively, the forward and rear transverse frame-bars; E, the upper frame-bar, and E′ the dropman's seat, constituting the forward frame of an ordinary two-row corn-planter.

F is a seed-cup wheel, journaled in the bottom of the box A on a stud, *a*, and provided with seed-cup apertures *f* in clusters of three, as shown by the drawings, or in any other desired numbers. The wheel F has an annular flange, *f′*, with an upper series of teeth, *g*, on its periphery, corresponding in number to one-half the number of series of seed-cups, and a series of teeth, *g′*, in a lower plane than the teeth *g*, and arranged intermediate with the teeth *g* around the wheel F. The teeth *g g′* are formed with a radial and a sloping side, as shown in the drawings.

H is an ordinary cap over the wheel F, and has the ordinary annular opening *h*, coincident with the path of the seed-cups as they revolve by the rotation of the wheel F, and has also the ordinary cut-offs *h′*.

I I′ are two parallel bars, arranged one above the other, and with their ends entering the bottoms of the boxes A to one side of the seed-cup wheels F. Midlength the bars I I′ have rack-bars *i i′* on their adjacent faces, which gear with a pinion, J, journaled on a stud, *j*, secured to one of the frame-bars D′, or otherwise fixed in position, so that moving

either bar I or I′ longitudinally will impart a reverse longitudinal movement to the other bar in the evident manner.

K K are levers, with sockets *k* in their upper ends, and are journaled at *k′* to the frame-bar E, and their lower ends provided with segment-gears *k″*, which gear with short rack-bars *k‴* on the bar I, so that they will hold the bar I down to its place, and may be oscillated to reciprocate the bar I, and thereby the bar I′. K′ is a hand-lever, which may be seated in the socket in either lever K for convenience of the dropman in operating the levers K.

Each end of the upper bar I has a spring-pawl, L, journaled thereto at *l*, and pressed toward the seed-cup wheel F by a spring, *l′*, a distance limited by a stud-pin, *l″*, and beyond the free end of the pawl L and on the extreme end of the bar I a detent or upwardly-projecting stop, M.

The ends of the lower bar I′ have each a spring-pawl, L′, and detent M′, same as the corresponding parts L and M, respectively, on the bar I. The ends of the lower bar I′ are also enlarged, and provided with the usual cavity *n* for the reception of the upper end of the ordinary discharging valve N in the seed-tube.

To give the seed free access to all parts of the upper surface of the cap H without excessive enlargement of the seed-box, a metal plate, *a′*, is placed at one side and bottom of the seed-box, with a projection, *a″*, which extends over the cap H and around the side of the seed-cup wheel, as shown in the drawings.

In operation the bars I I′ are reciprocated by means of a lever, K. At Fig. 7 the bar I is at the limit of its throw in the direction shown by the arrow, and the bar I′ at the limit of its throw in the opposite direction.

In moving the bar I to the position shown at Fig. 7, the extremity of the pawl L abuts against the radial side of one of the teeth *g* and gives a partial rotation to the wheel F, carrying it to the position shown at same figure, at which position the wheel F is stopped and its momentum prevented from carrying it farther by the detent M′ on the lower bar I′ resting against the sloping side of an adjacent tooth of the lower series *g′*. As the bar I is drawn back on its return movement, and the bar I′ thereby thrust forward, the pawl L will rise over the sloping side of the tooth *g*, as shown at Fig. 8, and the pawl L′, acting on one of the lower series of teeth *g′*, will impart another movement to the seed-cup plate and carry it to the position shown at Fig. 5, when the detent M on the bar I will, by coming in contact with the sloping side of a tooth, *g*, as shown at same figure, act as a stop to the movement of the wheel F.

Successive repetitions of the foregoing operations will impart successive impulses to the seed-cup wheel, thereby bringing the groups of seed-cups consecutively over the ordinary discharge-opening P, whence the seed are discharged through the lower valve in the ordinary manner.

What I claim as new is—

1. In a corn-planter, a device constructed, substantially as herein described, of two bars or parts, arranged to operate simultaneously in opposite directions, in combination with and for the purpose of actuating the seed-cup wheels, in the manner substantially as and for the purpose specified.

2. The bars I I′ and pinion J, in combination with seed-cup wheels F, substantially as described, and for the purpose specified.

3. The bars I I′ having pawls L L′, respectively, in combination with seed-cup wheel F, having series of teeth *g g′*, upon which the pawls act, substantially as described, and for the purpose specified.

4. The combination, with a seed-cup wheel, F, of two actuating-bars, each having a pawl adapted to impart movement to the seed-cup wheel alternately, substantially as described, and for the purpose specified.

5. The detents M M′, in combination with the bars I I′ and spring-pawls L L′, substantially as described, and for the purpose specified.

6. A seed-cup wheel having series of teeth *g* and *g′* in different planes, in combination with bars I I′, having pawl L in same plane as teeth *g*, and a similar pawl, L′, in same plane as teeth *g′*, substantially as and for the purpose specified.

7. In combination with the seed-wheels F and bars I I′, geared or connected so that longitudinal movement of one bar will move the other in an opposite direction, a lever, K, by which they may be operated, substantially as described, and for the purpose specified.

8. In a corn-planting machine, the combination of the levers K, pivoted to the bar E, having handles K′ and segment-gears on their lower ends, with bar I, having rack-bars to gear with said segment-gears, and a rack-bar, *i*, to gear with pinion J, so that the levers K will prevent the rack-bar I from springing upward and out of gear with the pinion J, substantially as and for the purpose set forth.

9. The seed-box constructed with an enlargement, *a″*, at one side and bottom, said enlarged portion being projected over the seed-wheel, 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.

GEORGE W. BROWN.

Witnesses:

I. S. PERKINS,

L. STEVENS.