

(No Model.)

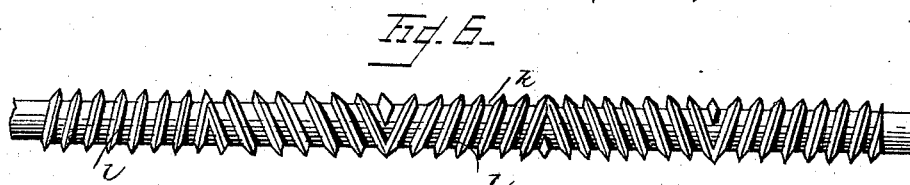
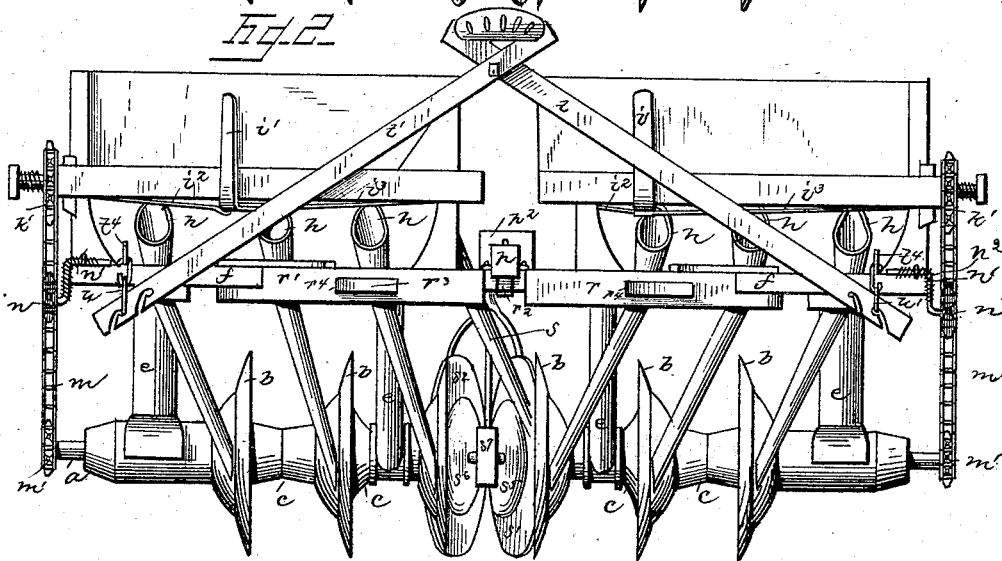
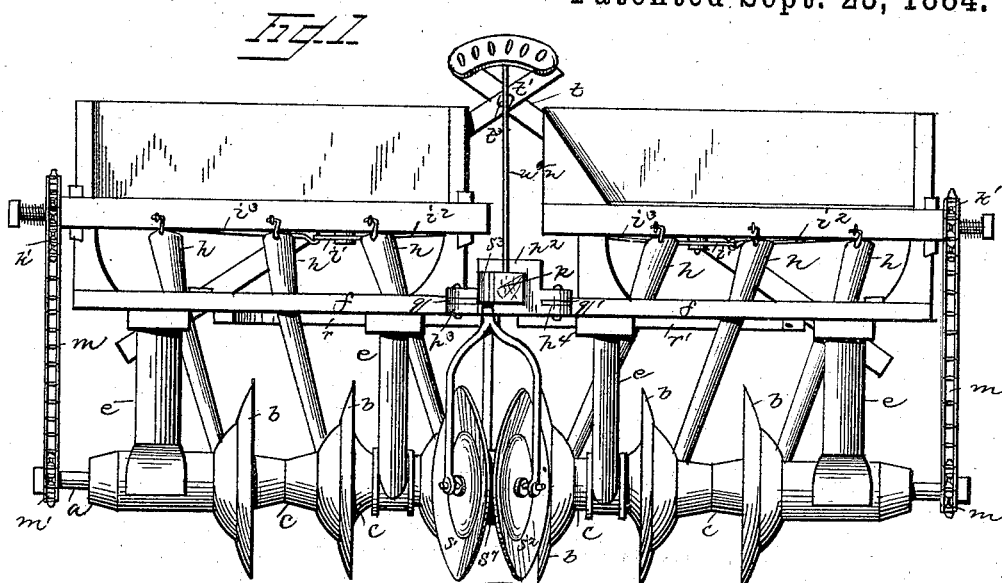
E. A. DANIEL.

2 Sheets—Sheet 1.

SEED PLANTER.

No. 305,430.

Patented Sept. 23, 1884.



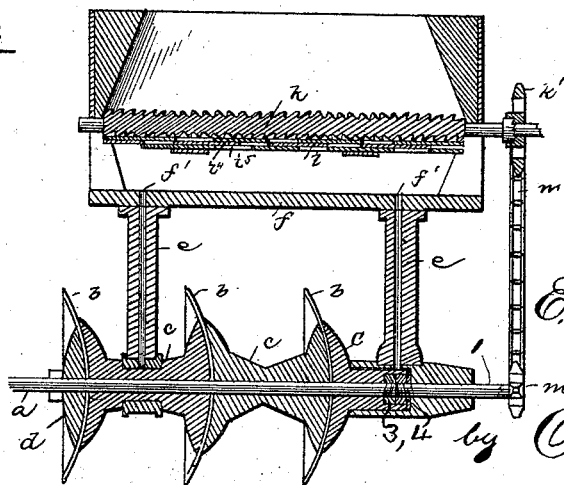
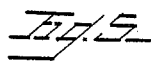
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2 Sheets—Sheet 2.

Patented Sept. 23, 1884.



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UNITED STATES PATENT OFFICE.

ELLISON ARMISTEAD DANIEL, OF DUNCANSVILLE, ASSIGNOR OF ONE-HALF
TO ROBERT P. MILLER, OF CEDAR HILL, TEXAS.

SEED-PLANTER.

SPECIFICATION forming part of Letters Patent No. 305,430, dated September 23, 1884.

Application filed January 25, 1884. (No model.)

To all whom it may concern:

Be it known that I, ELLISON A. DANIEL, a citizen of the United States, residing at Duncansville, in the county of Dallas and State of Texas, have invented a new and useful Rotary Seed-Planter, of which the following is a specification, reference being had to the accompanying drawings.

Figure 1 of the drawings is a front elevation of my improved rotary seed-planter. Fig. 2 is a rear elevation. Fig. 3 is an end view. Fig. 4 is an end view. Fig. 5 is a transverse vertical section. Fig. 6 is a view of the feed-screw.

This invention has relation to rotary seed-planters; and it consists in the construction and novel arrangement of parts, as will be hereinafter fully described, and particularly pointed out in the claims appended.

Referring by letter to the accompanying drawings, *a* designates the main shaft, on which the concavo-convex rotary cutters or blades *b* are mounted. The seeder is made in two sections, and as the sections are similar in construction a description of one will answer for both. The concavity of the blades *b* is toward the middle of the planter, and the blades are separated by spools *c*, washers *d* being employed between the blades and boxing for the shaft *a*. The standards *e*, which support the seeding mechanism, carry the boxing for the shafts at their lower ends. These standards are cast hollow, and are secured to the cap-piece *f* by bolts and nuts. The cap-piece is provided with an oil-hole, *f''*, for each standard, designed for oiling the bearings on the shaft *a*. These are all brass, the openings extending from the cap-piece to the shafts, so the bearings are hid from the dust. The cap-piece is provided near each end with a riser, *g*, on which the seed-box rests, and to which it is secured. The seed-cups *h* are connected to the front edge of the hopper in any suitable manner, and enter the mouths of the seed-tubes, as shown. The bottom of the seed-box is concave in cross-section, and a concave regulating-slide, *i*, is operated by a lever, *i'*, pivoted to the under face of the seed-box near its rear edge, and is made in two sections, which are connected at their outer ends by two rods, *i'' i'''*, with the lever *i'*, so that when the lever is moved the sections of the slide will move in opposite directions. By moving the lever *i'*

in one direction the slide will quickly open the discharge-openings, and by moving it in the opposite direction they will quickly close said openings, and they may be stopped to regulate the sizes of the openings. The sections *i'' i'''* are perforated, and work one over the other, as shown. The feed-screw *k* fills the bottom of the seed-box, and is journaled in the ends of the seed-box. The journals project through the ends of the box, and the one at the outer end of the seed-box is provided with a pulley, *k'*, having a clutch and lever for throwing it in and out of gear. This feed-screw is provided with sets *l* of both right-hand and left-hand threads between the discharge-openings in the bottom of the seed-box. When rotated, this feed-screw will carry the seed from all parts of the seed-box to the discharge-openings. The feed-screw is run by an endless chain, *m*, running from a driving-pulley, *m'*, on the end of the shaft *a* over the pulley *k'*. The chain is held in place by a self-adjusting idler, *n*, which works on a crank-arm, *n'*, secured in bearings on the cap-piece. The crank-arm *n'* is controlled by a spiral spring, *n''*, coiled upon it and secured to hold the idler against the chain, and at the same time yield to the motion of the chain.

The two sections of the machine are connected together in the following manner: *p* designates the tongue of the machine, provided with a series of vertical perforations, *p'*, for the greater portion of its length between its ends. A rectangular slotted guide-plate, *p''*, is provided with laterally-bifurcated and vertically-perforated lugs *p'''* and *p''''* on its diagonally opposite lower corners, which engage ears *q q'*, projecting from the upper faces at the inner front corners of the cap-pieces. Pins *q''*, passed down through the perforations in the lugs and ears, form the pivotal connections between the sections. To the rear end of the tongue *p*, which passes through the rectangular slot in the guide-block *p''* and is secured therein by a pin passing down through a perforation in the block and through one of the vertical perforations in the tongue, is fastened by a swivel-connection two slotted bars, *r r'*, one on the right, the other on the left. These bars *r r'* diverge forwardly, and are secured to the cap-pieces of the sections by a pivotal connection, as shown. The under side of the tongue is provided in rear of the sections with

a guide-loop, r^2 , through which a key-bar, r^3 , is passed, its ends resting in the slots r^4 in the bars r^1 , to lock the sections rigidly together, when desired. When the key-bar r^3 is in place, the sections are held firmly together and strengthened; but when the key-bar is removed the sections have vertical play at their connections. The angles of the sections may be changed by removing the pin in the slotted guide and moving it back or forth on the tongue and replacing the pin when the guide has been moved to the proper place. Between the sections, and opening from the left-hand section, is a spout or seed-tube, s , and to open the furrow for this tube I provide a pair of advance openers or disks, $s^1 s^2$, which are journaled in bearings in a frame, s^3 , swiveled to the tongue in front of the sections, as shown. These disks $s^1 s^2$ are also concavo-convex, and have their convex faces toward each other. They are made to converge to the front on their axle, and are separated by spools $s^5 s^6$, and a wedge-shaped block, s^7 , between the inner spools, s^5 , to give them the converging position. The seat is secured in the rear of the sections upon the upper ends of two crossed bars, $t^1 t^2$, slotted at t^3 to receive a securing-bolt, t^4 , which holds them together. The lower ends of the cross-bars $t^1 t^2$ are secured to perforated arms $t^5 t^6$, secured to the cap-pieces near their outer ends, by swinging hook-and-bail connections $u^1 u^2$. The seat is connected at the front by a brace, u^3 , connected by a bolt, u^4 , to the tongue, to steady the seat. The seat is placed in this position to balance the tongue to relieve the necks of the team. The outer and lower ends of the bars $t^1 t^2$ can be adjusted upon the perforated arms $t^5 t^6$. The cutters or blades open the furrows and the tubes convey the seed to the ground, depositing it in the opening made by the cutters, where it is immediately covered by the earth falling over it.

I may change the drill to a broadcast-seeder by simply removing the seed-tubes and placing a scattering-board beneath the seed-box, or by running the grain out in front of the cutters instead of in the rear of them, and employing scatterers in the lower ends of the tubes.

This machine is cheap and simple in its construction, may be simply and easily adjusted to different angles, may be used either as a drill or as a broadcast-seeder, and while it is light is substantial and will not easily get out of order. The shaft a is made in two sections—viz., the long portion a and the short portion 1. The former has a square head, 3, and the latter a square head, 4, which are seated in a rectangular socket in the end of the outer spool, c , which enters the boxing at the lower end of the hollow arm e'' .

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

1. In a seed-planter, the combination, with the cutters mounted rigidly on the shaft a and

separated as described, the hollow standards forming bearings for the shaft and connected at their upper ends to the cap-piece, of the seed-box raised above the cap-piece, having concave bottom with discharge-openings, the sectional regulating-slide operated by the double lever, the feed-screw, seed-cups, and discharge-tubes, and mechanism for operating the cutters and feed-screw, substantially as specified.

2. In a rotary seed-planter, the combination, with the seed-box having a concave perforated bottom, of the concave sectional slide i , the opposite ends of the sections being connected by rods $i^2 i^3$ to points on the lever i^4 on opposite sides of its fulcrum, substantially as specified.

3. In a seed-planter, the combination, with the two sections constructed as described and provided with ears at the front corners of the inner ends of the cap-pieces, of the slotted guide perforated vertically for a securing-pin, and provided at its lower sides at the front and rear opposite corner with the two laterally-bifurcated and vertically-perforated lugs secured to the ears, and the vertically-perforated tongue passed through the slot and secured therein by a pin, and the diverging slotted bars hinged to the tongue in rear of the sections and connected to the cap-pieces by a pivotal connection, substantially as specified.

4. In a seed-planter, the combination, with the sections of the machine connected by the slotted guide, lugs, and ears, and by the tongue and swivel-connected slotted forwardly-diverging bars, of the loop on the under face of the tongue in rear of the sections, and the removable key-bar occupying the slots of the diverging bars and the loop on the tongue, substantially as specified.

5. In a seed-planter, the combination, with the cap-pieces having the rearwardly-projecting perforated arms, of the crossed bars connected thereto at their lower ends by bail-and-hook connections, and slotted near their upper ends at their points of intersection for the reception of the securing-bolt, and the seat secured thereon and braced from its front to a point on the tongue in front of the seed-boxes, substantially as specified.

6. In a seed-planter, the combination, with a sectional planter having a discharging seed-tube between the inner cutters of the sections, of a frame swiveled to the tongue in front of the space between the sections, and provided with forwardly-converging cutters rotating on their shaft, and separated by spools and a wedge-piece upon the axle, substantially as specified.

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

ELLISON ARMISTEAD DANIEL.

Witnesses:

J. W. CORNELIUS,
JO H. STEWART.