(No Model.) 2 Sheets—Sheet 1.

R. SMITH.

CHECK ROW CORN PLANTER.

No. 344,550. Patented June 29, 1886.

Fig. 1.

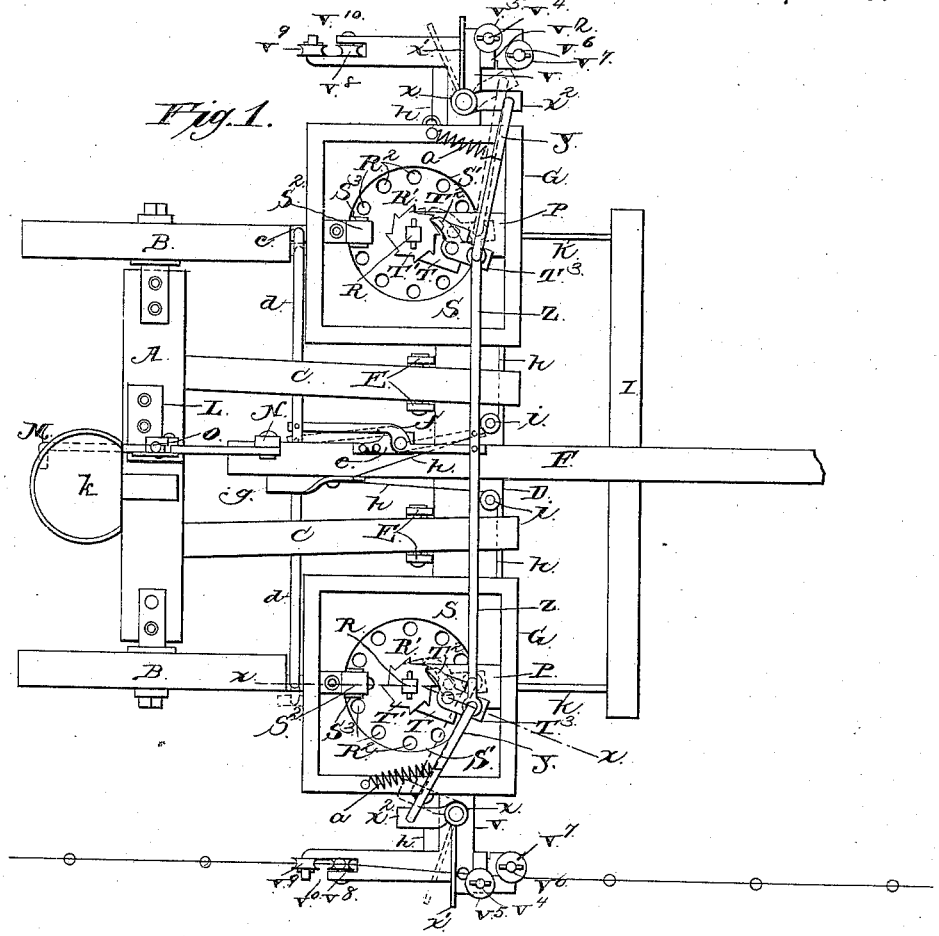
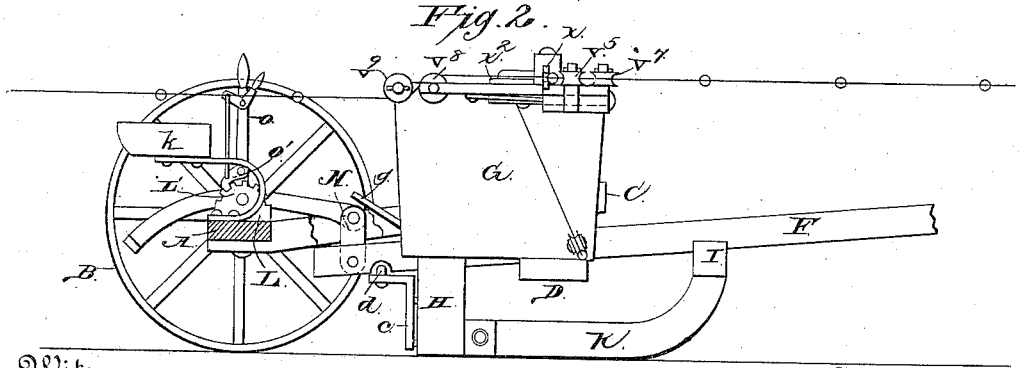


Fig. 2.



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(No Model.) 2 Sheets—Sheet 2.

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Fig. 3

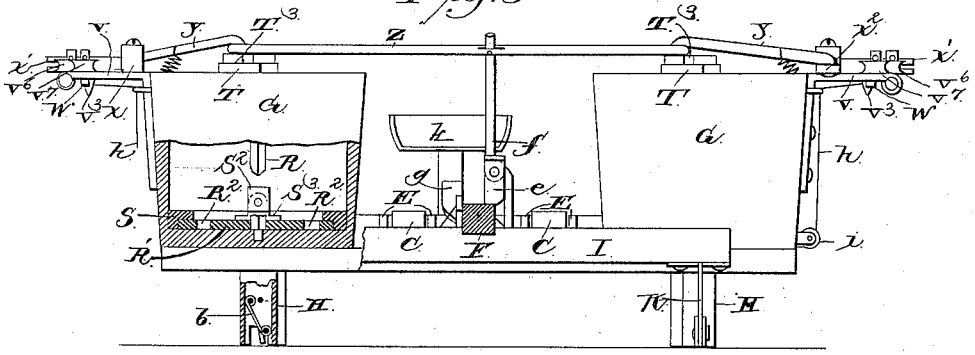


Fig. 4.

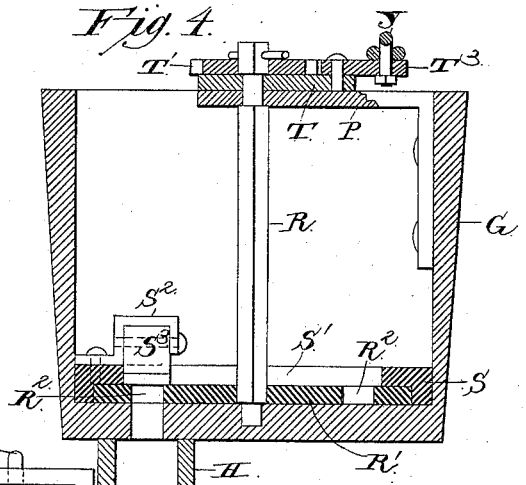


Fig. 6.

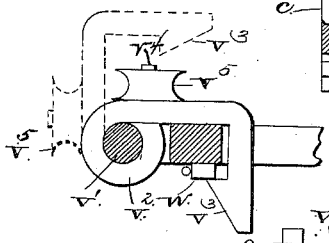
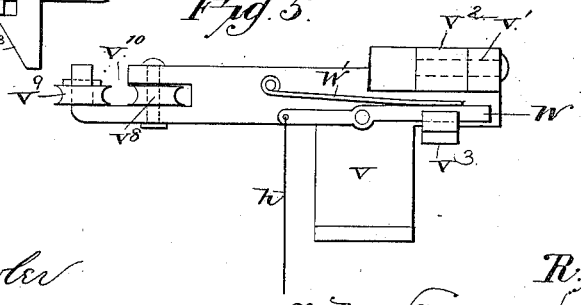


Fig. 5.



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UNITED STATES PATENT OFFICE.

ROBERT SMITH, OF LAFAYETTE, ILLINOIS.

CHECK-ROW CORN-PLANTER.

SPECIFICATION forming part of Letters Patent No. 344,550, dated June 29, 1886.

Application filed February 27, 1886. Serial No. 193,502. (No model.)

To all whom it may concern:

Be it known that I, ROBERT SMITH, a citizen of the United States, residing at Lafayette, in the county of Ogle and State of Illinois, have invented a new and useful Improvement in Check-Row Corn-Planters, of which the following is a specification, reference being had to the accompanying drawings.

My invention relates to an improvement in check-row corn-planters; and it consists in the peculiar construction and combination of parts, that will be more fully set forth hereinafter, and particularly pointed out in the claims.

In the drawings, Figure 1 is a top plan view of a check-row corn-planter embodying my improvements. Fig. 2 is a side elevation of the same. Fig. 3 is a detailed vertical sectional view taken on the line *x x* of Fig. 1. Fig. 4 is a detailed sectional view. Fig. 5 is an inverted plan view of one of the check-row attachments. Fig. 6 is a front elevation of one of the check-row attachments, partly in section, showing the pulley V^5 in its normal horizontal position in solid lines, and tilted to a vertical position in dotted lines to release the check-line.

A represents an axle, on the ends of which are mounted the supporting-wheels B. Parallel arms C are secured to the axle on opposite sides of the center thereof and extend forwardly therefrom.

D represents a transverse beam, which is provided on its rear side with bracket-arms E, to which the front ends of the arms C are hinged or pivoted, and to the center of the said beam D is secured a tongue, F, having the rear extended end, which approaches the axle. On the outer ends of the beam D are secured seed-hoppers G, and from the lower rear sides of the said hoppers depend seed-spouts H. A cross-bar, I, has its center secured to the tongue in front of the transverse beam D, the said bar being arranged parallel thereto, and to the outer end of the draft-bar are attached the front ends of furrow openers or runners K, the rear ends of which are attached to the lower ends of the seed-spouts.

L represents a bracket, which is secured on the upper side of the axle, near the center thereof, and on the said bracket is formed a segmental rack, L′, to which is fulcrumed a foot-lever, M. The front end of the lever M is connected to the rear end of the tongue by means of a link, N, and to the said lever M is pivoted a hand-lever, O, which is provided with a gravity-pawl, O′, that engages with the rack-teeth, and thereby serves to lock the hand-lever thereto at any desired position. By means of the lever M and the hand-lever O it will be readily understood that the rear end of the tongue may be raised or lowered at will, thus throwing the weight of the frame and the planting mechanism on the supporting-wheels, and thus causing the runners or furrow-openers to run in the ground at any desired depth, and thereby regulate the depth at which the seeds are planted.

In the bottom of each seed-hopper G is made an opening that communicates with the upper end of the seed-spout, and to one side of each hopper is secured a horizontal bracket-arm, P, in which, and in the circular recess which is made in the bottom of the hopper, at the center thereof, is journaled a vertical shaft, R, carrying a rotating seed-disk, R′, which works on the bottom of the hopper. The seed-disk is provided with a series of openings, R^2, which are arranged to pass successively over the opening in the bottom of the hopper as the shafts R are rotated.

Plates S, having central circular opening S′, are arranged on the upper side of the rotating seed-disks and form false bottoms for the hoppers, and the rear side of the said plates are provided with brackets S^2, in which are journaled blocks S^3, that bear on the upper sides of the seed-disks, at the rear sides thereof, and serve as stirrers for the seed in the hoppers, to prevent the seed from becoming lodged therein.

Near the upper end of each vertical shaft R is loosely pivoted a horizontal sweep-arm, T, which bears upon the bracket-arm P, and on the upper end of each shaft R is secured a fixed ratchet-wheel T′. The outer ends of the sweep-arms are provided with pivoted pawls T^2, which are adapted to engage with the ratchet-wheels T′, and have outwardly-extending arms T^3.

V represents bracket-arms, which extend outwardly from the outer sides of the seed-

hoppers. The front end of each of the arms V has a forwardly-projecting spindle, V′, on which is hinged a collar, V^2, having on its inner side the depending hook V^3, and on its upper side a projecting spindle, V^4, on which is journaled a horizontal pulley, V^5. The pulley is thus provided with the horizontally-pivoted bearings, by means of which the pulley may be moved on its bearings from a vertical to a horizontal position. On the under side of each bracket-arm V is fulcrumed a lever, W, the front end of which engages with the depending hook V^3, being held normally in engagement therewith by means of a spring, W′. The front end of each arm V has also a vertical stud, V^6, on which is journaled a horizontal pulley, V′. Near the rear end of each arm V is journaled a vertical pulley, V^8, and at the extreme rear end of each arm V is journaled a similar pulley, V^9. An opening, V^{10}, is made in the outer side of each of the arms V at the rear ends thereof, and between the pulleys V^8 and V^9.

X represents sweep-levers, that are pivoted on the bracket-arms V, and have the outer bifurcated arms, X′, and the arms X^2 extending substantially at right angles to the arms X′. These arms are connected to the extended arms T^3 of the pawls T^2 by means of the connecting rods or pitmen Y, and the pivotal inner ends of the said pitmen are connected together by means of a transverse connecting-rod, Z. Springs *a* are connected to the seed-hoppers, and to the outer ends of the pitmen Y, and draw rearwardly upon the latter, so as to keep the sweep arms X normally in the position shown in solid lines in Fig. 1.

In the lower ends of the seed-spouts are pivoted flirt-valves *b*, and the said seed-spouts are also provided with pivoted arms *c*, which engage with the said flirt-valves so as to operate them. These arms *c* are connected by a transverse rod, *d*. A bracket, *e*, is secured on the tongue F and projects laterally slightly beyond one side thereof, and to the said bracket is fulcrumed a lever-rod, *f*, one end of which engages with the transverse rod Z, and the other engages with the transverse rod *d*.

g represents a foot-lever, which is fulcrumed to the tongue F, near the rear end thereof, and this foot-lever is connected by means of cords *h* to the rear ends of the spring-actuated latching-levers W, the said cords being guided by suitable pulleys, *i*, which are journaled on the frame.

The operation of my invention is as follows: The usual check-line is stretched across the field to be planted and anchored at both ends, and the line is passed between the pulleys at the front end of one of the arms V, through the bifurcated end of the lever X thereon, over the pulley V^8, and under the pulley V^9 at the rear end of the bracket-arm V. The machine is then drawn along by the team parallel with the check-line. When a button or knot on the check-line encounters the outer end of the lever X, the said lever is moved rearwardly to the position shown in dotted lines in Fig. 1, which causes the pawls on the outer ends of the sweep-arms to engage with the ratchet-wheels T′, and thereby causes the seed-disks to partly rotate and drop a few seeds from the seed-hopper into the seed-spouts. As the button or knot slips out from the end of the lever X, the springs *a* return the levers to their normal position, thus imparting a reverse movement to the sweep-arms T, causing the connecting-rod Z to move the lever-rod *f*, which moves the valves *b* in the seed-spouts, causing them to drop the seeds into the ground. The operation is repeated by each succeeding knot or button on the check-line until the field has been crossed.

When turning the machine at the end of a row, or when it is desired to disengage the machine from the check-line for any purpose, the driver, who is seated on a seat, *k*, supported on the axle, moves the foot-lever *g*, and thereby draws upon the cords *h*, causing them to draw inwardly upon the rear ends of the latching-levers W, which move the front ends thereof out of engagement with the depending hook V^3, thus releasing the pulley V^5, and causing the latter, by the lateral pressure of the check-line to move to a horizontal position, as shown, and thereby release the check-line from the machine.

Having thus described my invention, I claim—

1. The combination, with a corn-planter, of the bracket-arms V, having the forwardly-projecting spindles V′, the collars V^2, hinged thereon and having the depending hooks V^3 on their inner sides and the projecting spindles V^4 on their upper sides, the pulleys V^5, journaled on the said spindles, and the spring-actuated arms or levers W on the under side of the bracket-arms and engaging the hooks V^3, the bracket-arms also having the guide-pulleys for the check-lines, substantially as described.

2. The combination, in a check-row corn-planter, of the levers X, actuated by the check-line, and springs *a*, for imparting retrograde movement to the levers X, the rotating seed-disks having the sweep-arms T, the ratchet-wheels T′, and the pawls pivoted to the sweep-arms and engaging with the ratchet-teeth, and the pitmen connecting the said pawls, the rod Z, connecting the pawls, the check-valves in the seed-spouts, and having the arms connected by the rod *d*, and the fulcrumed lever-rod *f*, connecting the said rod *d* with the rod Z, for the purpose set forth, substantially as described.

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

ROBERT SMITH.

Witnesses:

SAMUEL F. MILLS,

JOHN M. BURNHAM.