

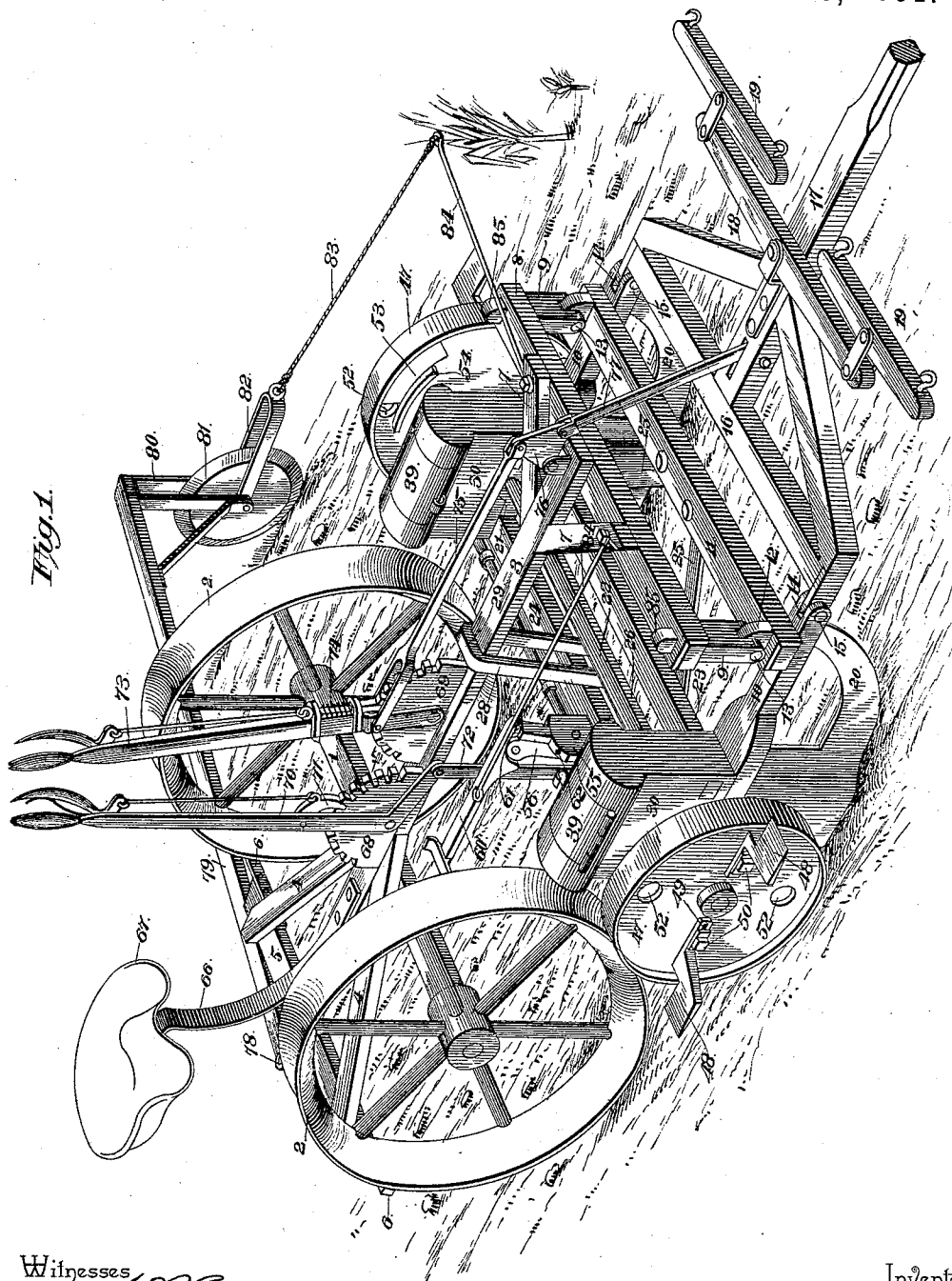
(No Model.)

P. FRIEDERICH.
CORN PLANTER.

3 Sheets—Sheet 1.

No. 444,645.

Patented Jan. 13, 1891.



Witnesses

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(No Model.)

3 Sheets—Sheet 2.

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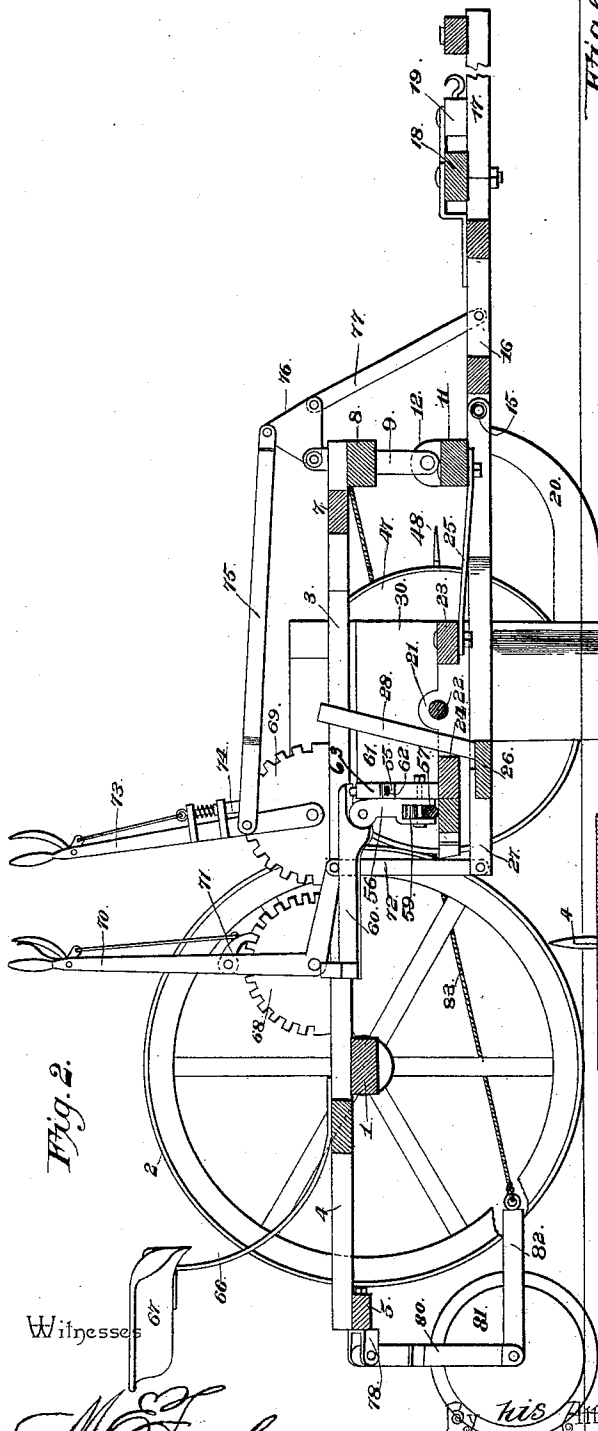


Fig. 2.

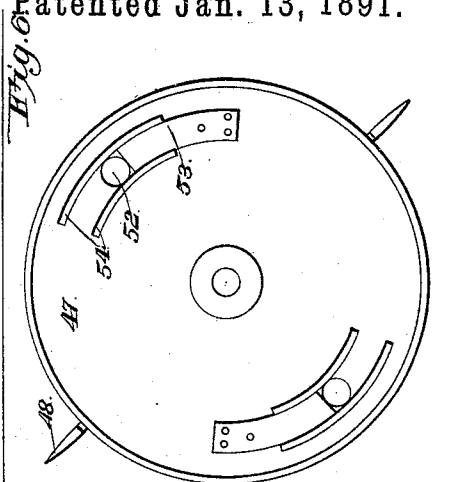


Fig. 6.

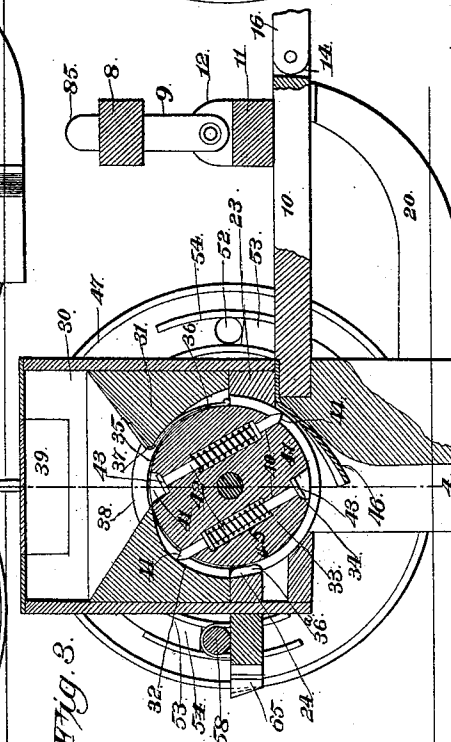


Fig. 3.

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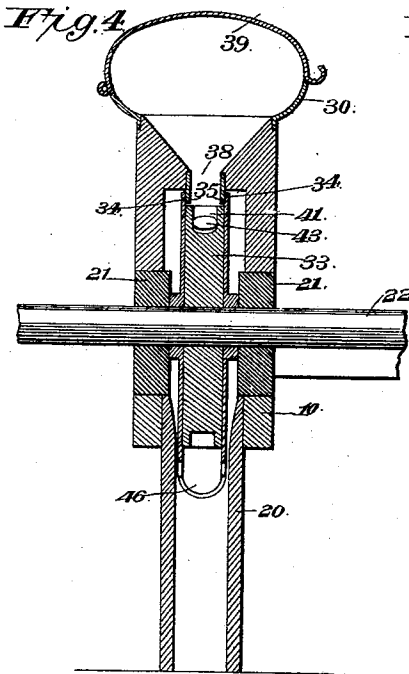
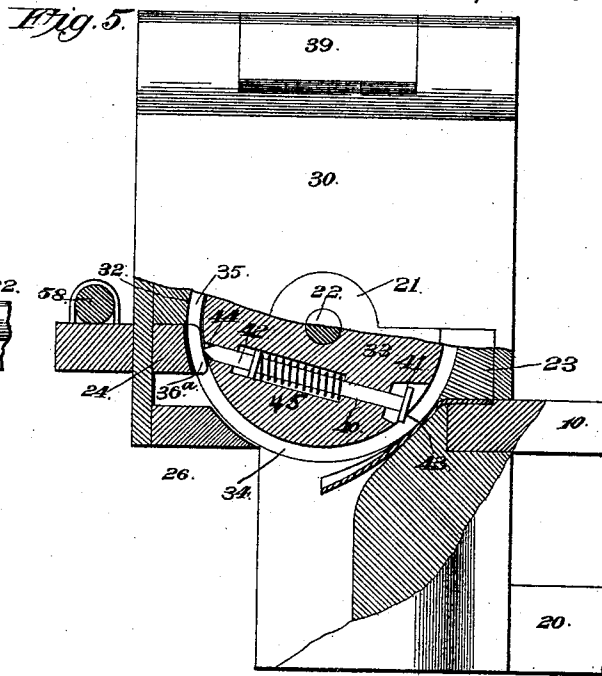
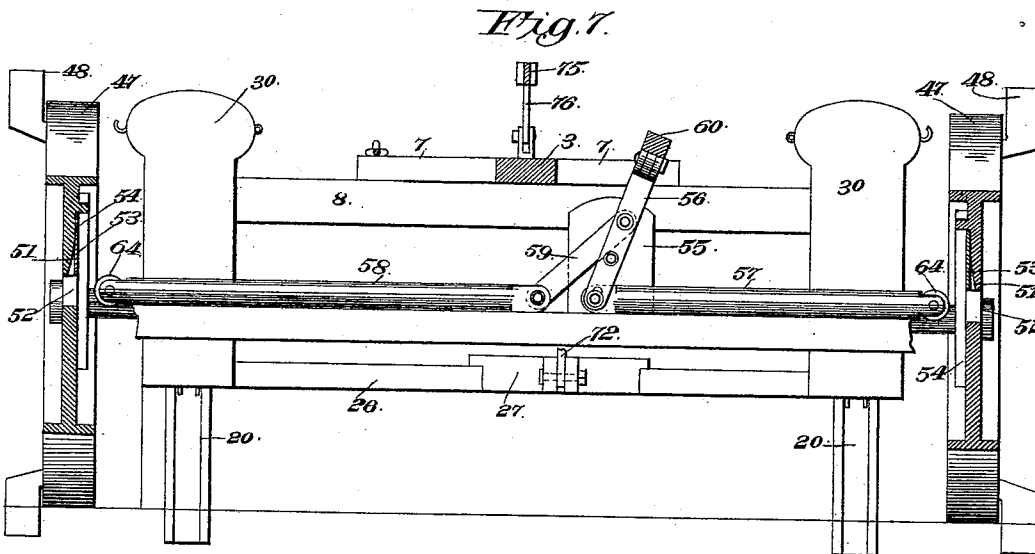
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UNITED STATES PATENT OFFICE.

PHILIPPE FRIEDERICH, OF LANGLEY, KANSAS.

CORN-PLANTER.

SPECIFICATION forming part of Letters Patent No. 444,645, dated January 13, 1891.

Application filed May 23, 1890. Serial No. 352,956. (No model.)

To all whom it may concern:

Be it known that I, PHILIPPE FRIEDERICH, a citizen of the United States, residing at Langley, in the county of Ellsworth and State of Kansas, have invented a new and useful Corn-Planter, of which the following is a specification.

This invention relates to check-row corn-planters; and it has for its object to provide a machine which may be used without the check-wire ordinarily employed in this class of planters for the purpose of checking off the ground, and which shall be simple in construction, durable, and easily manipulated.

With these ends in view the invention consists in the improved construction, arrangement, and combination of parts, which will be hereinafter fully described, and particularly pointed out in the claims.

In the drawings hereto annexed, Figure 1 is a perspective view of a check-row corn-planter embodying my improvements. Fig. 2 is a longitudinal sectional view of the same, taken slightly to one side of the center of the machine, so as to show the several adjusting-levers in elevation. Fig. 3 is a sectional view taken longitudinally through the seeding mechanism. Fig. 4 is a transverse sectional view taken on the line 4 4 in Fig. 3. Fig. 5 is a detail view on a larger scale, taken sectionally through one of the hoppers and seed-wheels. Fig. 6 is a side elevation of the inner side of one of the marking-wheels. Fig. 7 is a transverse sectional view taken through the marking-wheels and the brake mechanism for the latter.

Like numerals of reference indicate like parts in all the figures of the drawings.

The main frame of my improved corn-planter comprises the axle 1, having the supporting-wheels 2, and provided with the longitudinal forwardly-extending reach-frame 3, having rearwardly-extending diagonal braces 4, connected by a cross-bar 5, which is provided with scrapers 6, that bear against the rear sides of the supporting-wheels, so as to clear the rims of the latter of mud when the machine is in operation. The front end of the reach-bar 3 is provided with diagonally-extending braces 7, connected by a cross-bar 8, having downwardly-extending arms or brackets 9, to the lower ends of which the seeder-frame is hinged.

The seeder-frame is composed of a pair of longitudinal bars or beams 10, connected at their front ends by a cross-bar 11, having upwardly-extending transversely-perforated lugs or ears 12, which are connected by means of transverse pins 13 to the lower ends of the arms or brackets 9, depending from the cross-bar 8. The front ends of the longitudinal frame-bars 10 are provided with recesses 14 and with transverse perforations 15 for the attachment of the hound-frame 16, from which the tongue 17 projects forwardly. The tongue is provided with the usual draft attachment, consisting of a doubletree or equalizer 18 and singletrees 19.

Secured to the front end of each of the longitudinal frame-beams 10, and extending downwardly and rearwardly from the same, is a runner 20, which is curved in the usual manner, and the rear end of which is bifurcated to provide for the discharge of the seed into the furrow opened by the said runner.

Upon the upper side of the runners or upon the upper sides of the frame-beams 10 above said runners are mounted boxes or bearings 21 for a transverse shaft or axle 22, which carries the seed-wheels and marking-wheels, which will be presently more fully described. The boxes or bearings 21 are connected in front and rear of the shaft or axle 22 by the cross-bars 23 and 24, the former of which is connected with the cross-bar 11 at the front ends of the frame-bars 10 by means of forwardly-converging braces 25. That part of the runner-frame composed of the frame-bars 10, projecting in rear of the runners, is provided with a cross-bar 26, having rearwardly-extending converging braces 27 and upwardly-extending frame-bars 28, connected at their upper ends by a top piece 29. The frame composed by the uprights 28 and top piece 29 straddles the reach-bar 3 and serves to prevent lateral movement or vibration of the seeder-frame when the latter in operation is adjusted vertically. The frame composed of the converging bars 27 serves for the connection of the runner-frame with the wheel-frame through the adjusting-lever, as will be hereinafter more fully described.

The seed boxes or hoppers, which are designated by 30, are mounted upon the upper sides of the boxes 21, forming bearings for the shafts 22. The said seed-boxes may be 5 rectangular or of any other suitable shape, and they are provided with bottoms 31, the under sides of which have segmental recesses 32, forming bearings for the seed-wheels 33, which are mounted upon the shaft or axle 22 10 within the said hoppers. The seed-wheels 33 are provided with peripheral flanges 34, and the segmental or concave under sides of the bottoms 31 of the hoppers are provided with flanges 35, fitting against the innersides of the 15 flanges 34 of the seed-wheels, so as to guide the contents of the hoppers directly into the pockets or seed-cups in the rims or peripheries of the seed-wheels. The bottoms of the hoppers are provided at their front ends with 20 curved springs 36, the free ends of which bear against the peripheries of the seed-wheels, and are provided with angular bends 37, their extreme upper ends being suitably attached to the upper sides of the bottoms of the hoppers. These springs serve as cut-offs to prevent an undue quantity of seed from gathering in the pockets or seed-cups, and also to prevent the seeds from being bruised by the rotation of the seed-wheels. The bottoms of 30 the hoppers are beveled downwardly to the discharge-openings 38, and their upper sides are provided with hinged covers 39, of ordinary construction.

Each of the seed-wheels is provided with 35 two transverse parallel perforations 40, one on each side of the shaft or axle, and the said perforations are provided at opposite ends with enlarged mouths 41, forming the seed-cups. In the openings 40 are seated the followers 42, the outer ends of which, terminating in the seed-cups, are provided with heads 43 and the inner ends of which are beveled, as shown at 44. Springs 45 of volute form are suitably arranged to force the followers 45 42 normally in an inward direction, with their beveled ends 44 projecting slightly beyond the periphery of the seed-wheels. It will be seen that at all positions of the seed-wheel, except when the beveled end of the follower 50 42 is in contact with the cut-off spring 36, the seed-cup governed by said follower will be opened for the reception of seed. At the point, however, when the seed-cup approaches the discharge-point the beveled end of the 55 follower comes in contact with a suitably-arranged block 36^a, thus forcing the said follower in an outward or forward direction into the seed-cup and pushing or forcing the seed out of the latter.

Each of the runners is provided directly 60 below the discharge-point of the seed-wheel with a resonant brass plate 46, serving as a chute to receive the seed and to guide the same into the furrows opened by the runners. 65 These plates, which may be constructed of brass, bronze, bell-metal, or the like, serve not

only the purpose of chutes to convey the seed into the furrows, but they also serve to warn the operator by the absence of sound whenever the operation of dropping the seed has 70 been missed by the machine.

The shaft or axle 22, which carries the seed-wheels and which is mounted loosely in its bearings, carries at its outer ends the marking-wheels 47, which are provided on their 75 outer sides with radially-adjustable markers 48, having slots 49 to receive the bolts 50, by means of which they are secured in position on diametrically-opposite sides of the wheel. These markers, it will be understood, are arranged in alignment with the dropping mechanism and each other, so that one of the markers shall enter the ground and form an indentation therein simultaneously with the deposit of seed by the corresponding seed- 85 wheel. The innersides of the marking-wheels are provided on diametrically-opposite sides with inclined segmental recesses 51, terminating in openings or perforations 52, which said perforations are located intermediately 90 between the markers 48. Springs 53 are secured at the upper ends of the recesses 51 and extend over the latter to the perforations 52, and guide-flanges 54 are secured adjacent the said springs and recesses. 95

The upper side of the planter-frame is provided with an upright 55, to which is pivoted a lever 56. A pair of rods 57 and 58 are mounted to slide in suitable bearings transversely upon the upper side of the planter- 100 frame. One of said rods 57 is connected pivotally with the lever 56 below the fulcrum of the latter, and a connecting-rod 59 pivotally connects the sliding rod 58 with the lever 56 at a point above the fulcrum of the latter. 105 To the upper end of the lever 56 is pivoted a treadle-bar 60, the front end of which is provided with a catch 61, adapted to engage any one of the series of recesses 62 in the upper side of the uprights 55. A suitably-arranged 110 spring 63 serves to keep the catch 61 of the treadle normally in engagement with one of the recesses 62. The outer ends of the slide-rods 57 and 58 are provided with friction-rollers 64. 115

When the machine is in operation, the driver may, by pressing with his foot upon the treadle-bar 60, manipulate the lever 56 so as to throw the slide-rods 57 and 58 in an outward direction, thus causing the rollers 64 at 120 the outer ends of said slide-rods to bear against the innersides of the marking-wheels and eventually to enter the recesses or perforations 52 in the latter, which are thereby locked against further rotation, thus temporarily stopping the operation of the machine. 125 This device of course is only to be used when it is desired to bring the machine into the desired alignment at the starting-point of a new row. 130

The cross-bar 24 at the rear end of the runner-frame is provided with scrapers 65 to

keep the rims of the marking-wheels 47 free from mud during the operation of the machine.

The reach-frame 3 of my improved seed-planter is provided near its rear end with a standard or supporting-spring 66, which supports the driver's seat 67. The reach-frame in front of said seat is provided with a pair of toothed segments or racks 68 and 69. To the former is pivoted the bell-crank lever 70, the long arm of which is provided with a spring-actuated catch 71, and the short arm of which is connected by a pivoted rod 72 with the rear end of the triangular frame composed of the converging bars 27, extending rearwardly from the cross-bar 26, which connects the rearward extensions of the runners of the seeder-frame. By this device the rear end of the seeder-frame may be lifted from the ground, so as to throw the seeding mechanism temporarily out of operation when it is desired to transport the machine from place to place. The segment-rack 69 is provided with a lever 73, having a spring-actuated catch 74 engaging the said rack, and is connected by a link-rod 75 with one corner of a triangular or cam-shaped plate 76, or, if preferred, a bell-crank lever which is pivoted at the front end of the reach-bar. The said cam-shaped plate is in turn connected by a pivoted rod 77 with the tongue 17, which may thus be adjusted to raise or lower the draft, thus causing the runners of the seeder-frame to cut into the ground to any desired depth.

To the rear cross-bar 5 of the reach-frame is swiveled a link or clevis 78, in which is pivotally mounted a bar 79, the outer end of which is provided with a bracket 80, affording a bearing for the gage-wheel 81. Upon the axle of said wheel is pivotally mounted a yoke 82, the front end of which has forwardly-extending rope or chain 83, the front end of which may be connected detachably with one of a pair of rods 84, which are suitably attached to the front end of the reach-frame in such a manner as to be capable of being placed longitudinally upon the latter, and thus out of the way when not in use. A pair of blocks or uprights 85 are provided upon the front cross-bar 8 of the reach-frame to afford rests or bearings for the rods 84 when in use. This device, it will be seen, is for the purpose of forming a furrow to indicate the course of the machine in its return passage over the field, the gage-wheel being shifted from one side of the machine to the other every time it is turned at the end of a row.

The foregoing description, taken in connection with the drawings hereto annexed, will enable my invention to be readily understood by those skilled in the art to which it appertains. By raising or elevating the rear end of the seeder-frame from the ground by means of the lever 70 the machine may be easily and quickly thrown into or out of operation for transportation from place to place.

When the machine is to be started in the field, the seeding mechanism may be held temporarily inactive by means of the brake mechanism comprising the slide-bars 57 and 58, engaging the perforations 52 in the marking-wheels. After the machine has been brought into the desired alignment the treadle 60 is actuated by the foot of the driver to disengage the slide-bars 57 and 58 from the marking-wheels, which, being thus permitted to rotate, cause the axle 22, carrying the seed-wheels, to revolve. It will be seen that the distance between the hills may be accurately regulated by the diameter of the marking-wheels, the machine being constructed to drop twice to each revolution. The sound of the seed dropping upon the resonant chute 46 will notify the driver of any irregularity that may occur in the operation of the machine.

The seed-dropping mechanism is exceedingly simple in construction and effective in operation, failure to operate being rendered practically impossible, owing to the construction of the seed-wheels with the followers that serve to push or force the seed out of the seed-cups and onto the chutes by which it is conveyed to the ground. The seed is covered by means of the broad supporting-wheels of the machine, that follow directly in rear of the runners.

The general construction of my improved check-row corn-planter is simple, durable, and inexpensive, and it may be conveniently used even by unskilled hands to check-row corn quite as accurately as may be done by the use of more complicated, cumbersome, and expensive apparatus.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. In a check-row corn-planter, the combination, with the seeder-frame having the transverse revolving shaft or axle carrying the seed-wheels and marker-wheels of the transverse sliding rods having friction-rollers adapted to engage recesses or perforations in the said marking-wheels, and mechanism for adjusting the said sliding rods, substantially as set forth.

2. The combination of the seeder-frame having the runners and the transverse shaft or axle with the seed-wheels and the marking-wheels mounted upon said axle, said marking-wheels being provided with segmental inclined recesses and with perforations at the ends of the latter, the springs covering the said recesses, the transversely-sliding rods mounted upon the seeder-frame and having friction-rollers to engage the marking-wheels, and mechanism for adjusting said sliding rods, substantially as set forth.

3. The marking-wheels having the segmental inclined recesses, the perforations at the ends of said recesses, and the springs covering said recesses, in combination with the guide-flanges arranged adjacent to said recesses and perforations, and the sliding rods

mounted upon the seeder-frame and having friction-rollers adapted to engage the perforations in said marking-wheels to prevent the rotation of the latter, substantially as and for the purpose set forth.

4. The seed-boxes having the bottoms provided with curved or segmental recesses and with downwardly-extending flanges, as 35, in combination with the seed-wheels fitted in said recesses and having peripheral flanges, as 34, bearing against the outer sides of the flanges 35, and the cut-off springs 36, bearing against the peripheries of the seed-wheels between the flanges of the latter, substantially as and for the purpose set forth.

5. The seed-wheels having transverse parallel perforations on opposite sides of and equidistant from the axle, in combination with the plungers mounted in said perforations, and suitable operating mechanism, substantially as set forth.

6. In a corn-planter, the combination, with the seeder-frame having the runners and the seed boxes or hoppers, of the seed-wheels having transverse parallel perforations terminating in seed-cups at their outer ends, the spring-actuated plungers mounted in said perforations, having beveled projecting inner

ends, the spring cut-offs 37, and the blocks 36^a, mounted in the hoppers and serving to actuate said plungers to discharge the seed from the seed-cups, substantially as and for the purpose set forth.

7. The combination of the seeder-frame, the revolving axle having the seed-wheels and the marker-wheels, the latter provided with diametrically-opposite perforations, the transversely-sliding rods mounted upon the seeder-frame and having friction-rollers at their outer ends, an upright mounted upon the seeder-frame and having recesses in its upper side, a lever pivoted to said upright and having its lower end connected with the said slide-rods, and a spring-actuated treadle-bar pivoted to the upper end of said lever and having a catch adapted to engage the recesses in the upper end of the upright, substantially as and for the purpose set forth.

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

PHILIPPE FRIEDERICH.

Witnesses:

CHARLES ROBERTS,
G. N. NORTON.