

S. L. ALLEN.

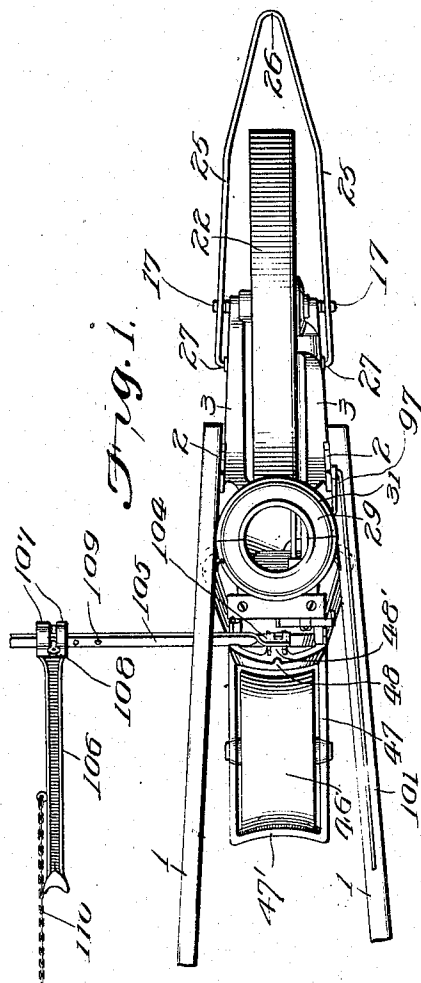
SEED DRILL.

APPLICATION FILED MAR. 27, 1907.

932,666.

Patented Aug. 31, 1909.

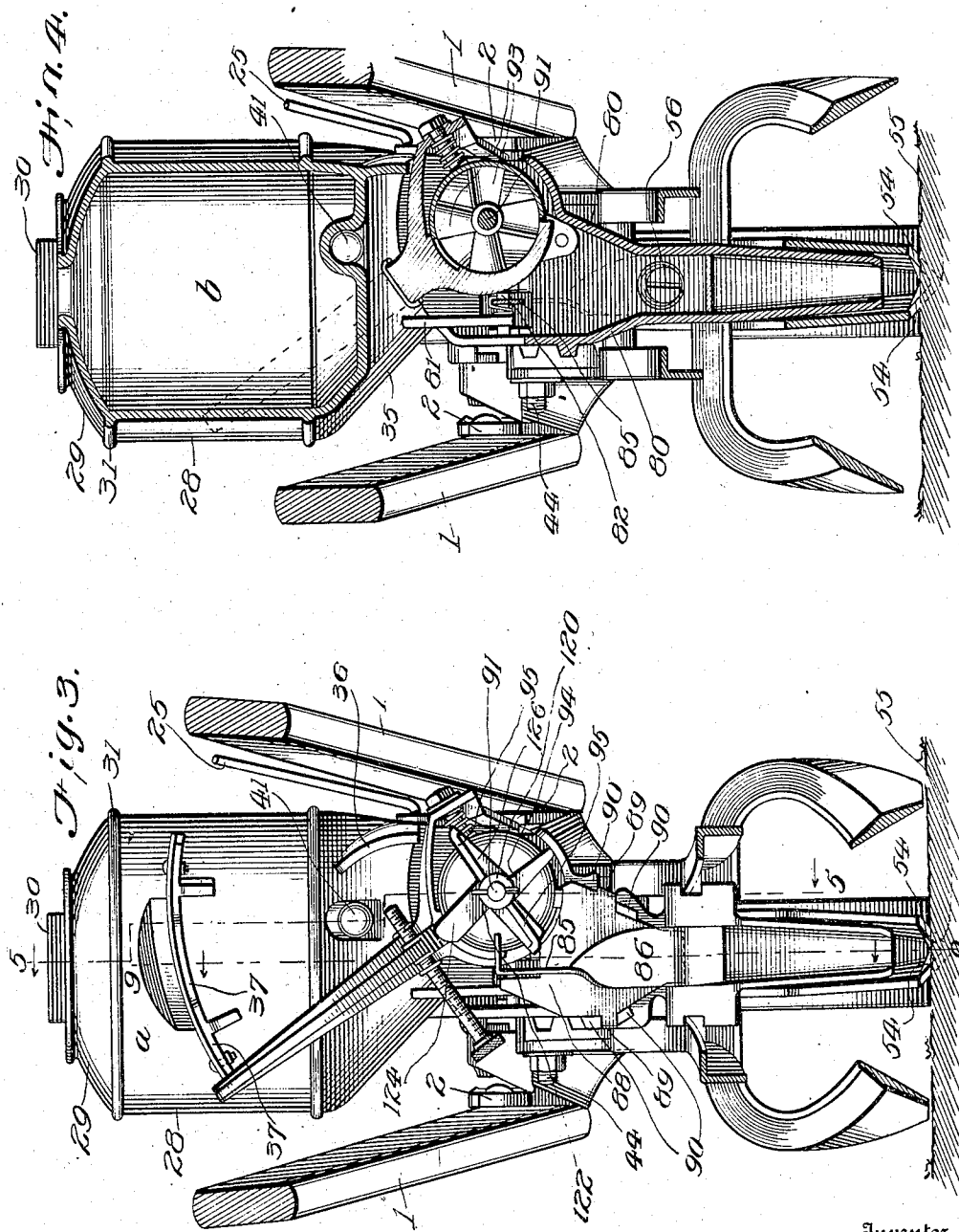
6 SHEETS—SHEET 1.



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6 SHEETS—SHEET 2.



Witnesses
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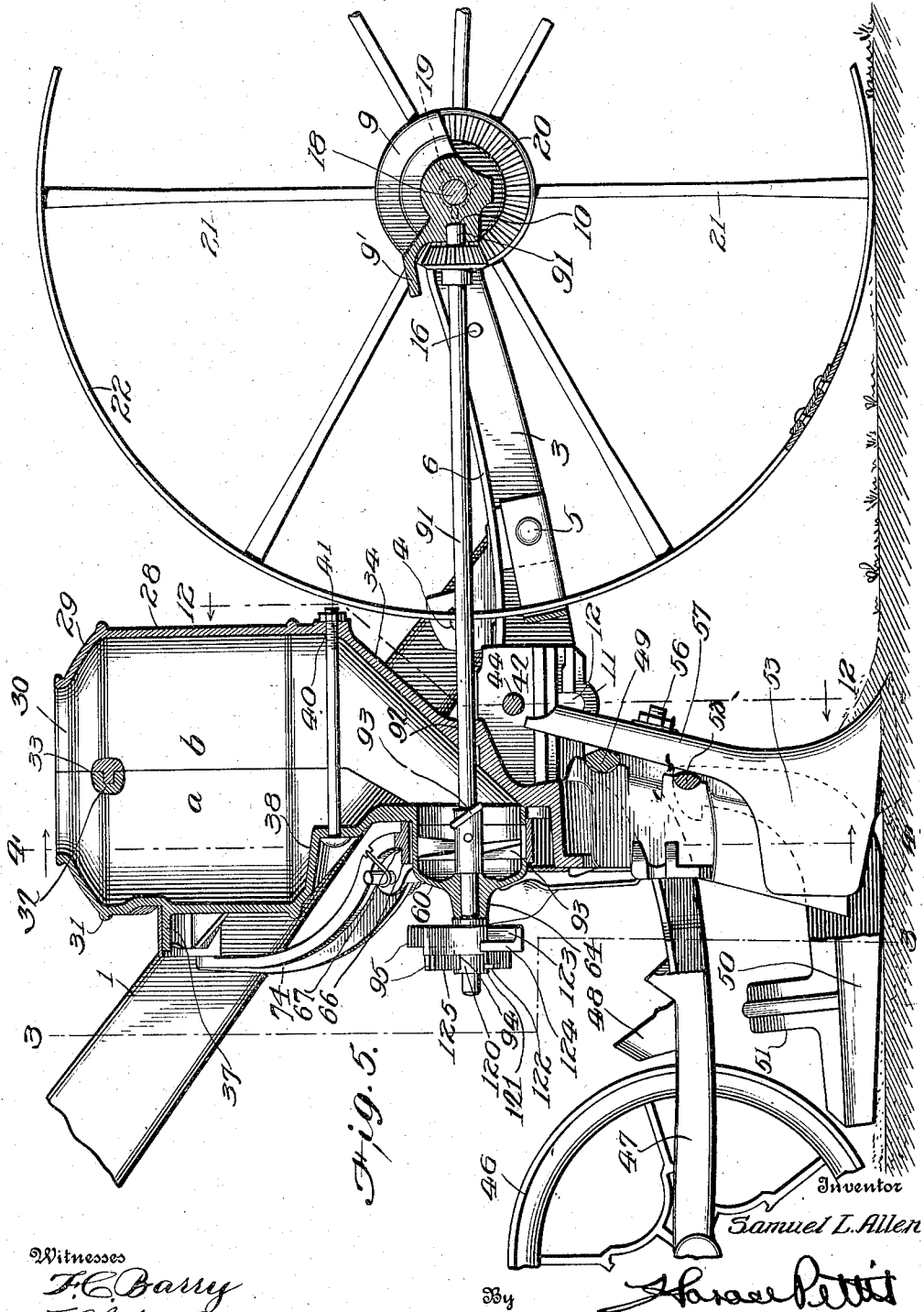
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6 SHEETS—SHEET 3.



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6 SHEETS--SHEET 4.

Fig. 7.

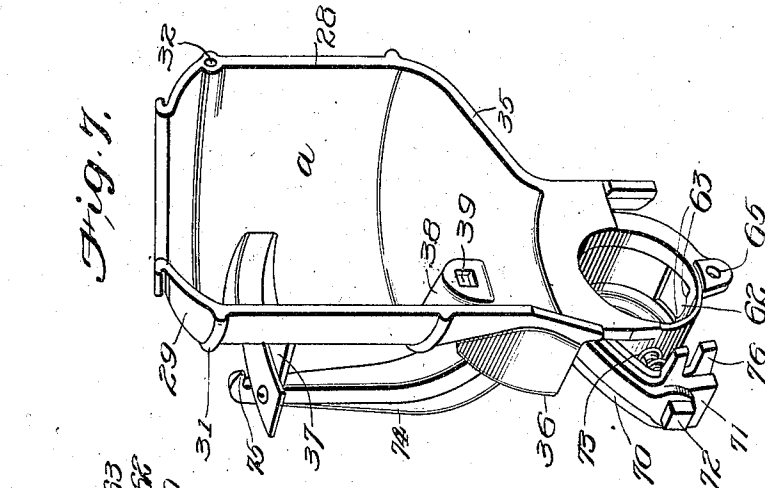


Fig. 8.

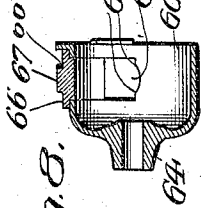


Fig. 6.

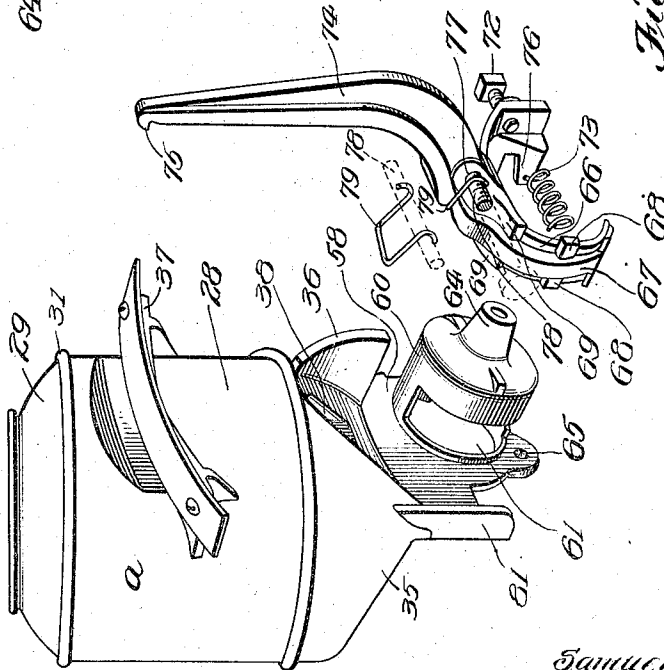
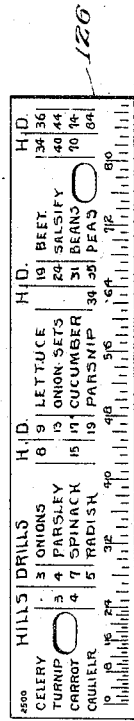


Fig. 15.



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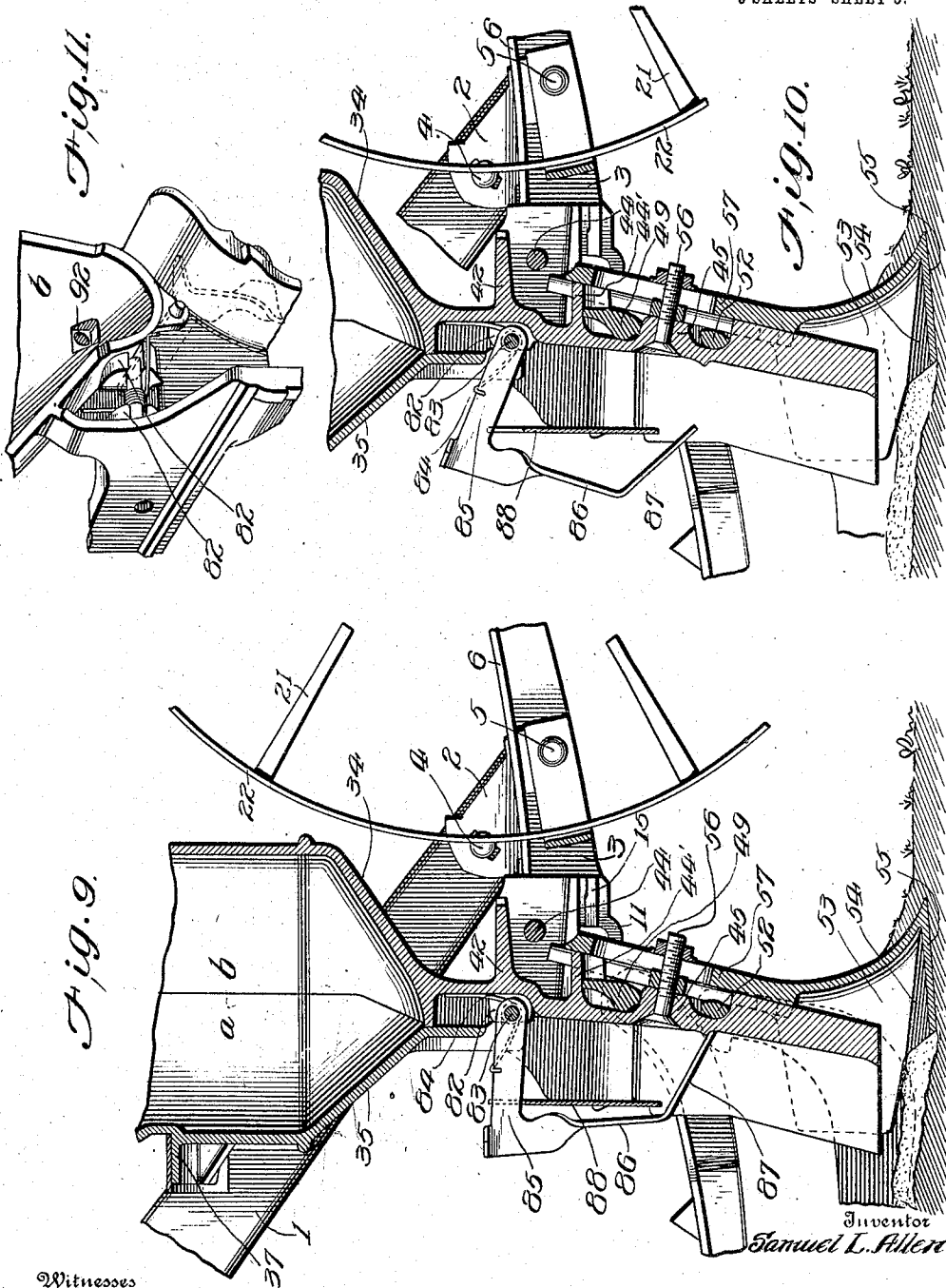
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6 SHEETS—SHEET 5.



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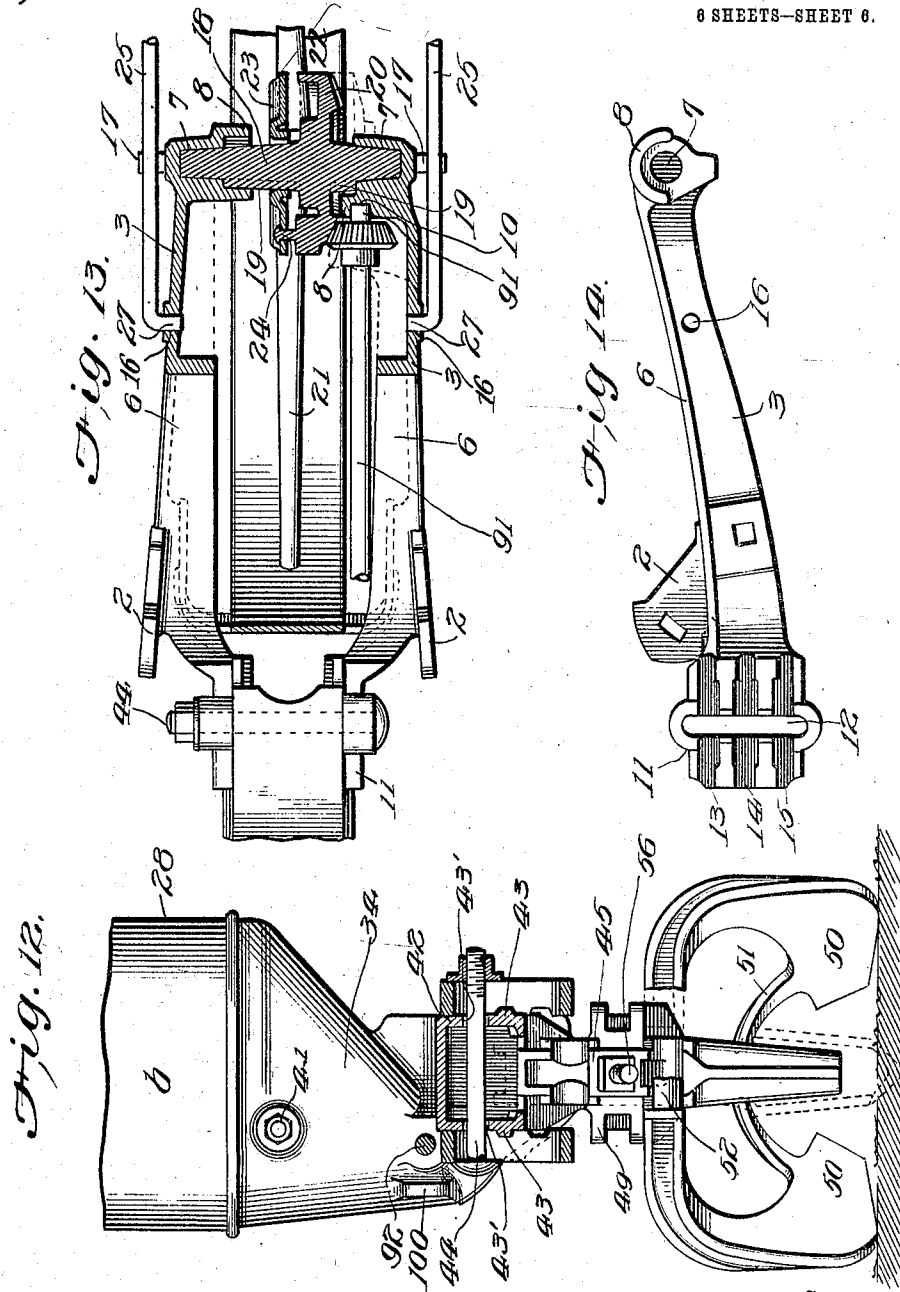
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8 SHEETS—SHEET 6.



Witnesses

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UNITED STATES PATENT OFFICE.

SAMUEL L. ALLEN, OF MOORESTOWN, NEW JERSEY.

SEED-DRILL.

932,666.

Specification of Letters Patent.

Patented Aug. 31, 1909.

Application filed March 27, 1907. Serial No. 364,795.

To all whom it may concern:

Be it known that I, SAMUEL L. ALLEN, a citizen of the United States, and a resident of Moorestown, county of Burlington, State of New Jersey, have invented certain new and useful Improvements in Seed-Drills, of which the following is a full, complete, and exact disclosure, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to seed planters, and more particularly to that class of the same known as combined hill and drill seeders, wheel hoe cultivators and plows.

The main objects of my invention are: to provide a hill and drill planter which may be interchanged for a wheel hoe cultivator and plow by the removal of a single bolt; to provide a hill and drill planter in which the feed and indicator mechanism may be removed to give access to its interior portion by the removal of a single bolt; to provide an opening plow, a coverer, and a roller, all of which may be removed by the removal of a single bolt; to provide in a planter adjustable side arms for the wheel bearings and to which handles are attached; to provide an improved automatic feed mechanism adapted to be used with various kinds of seed; to provide an improved dropping mechanism whereby the seeds may be deposited in either hills or drills; to provide an improved index arrangement to determine the area of the discharge opening; to provide a planter of few parts, of simple construction, and which can be quickly and conveniently taken apart; and to provide other improvements as will appear hereinafter.

In the drawings, Figure 1 is a plan view of my invention; Fig. 2 is a side elevation thereof; Fig. 3 a transverse section taken on line 3—3 in Fig. 5; Fig. 4 a transverse section taken on line 4—4 in Fig. 5; Fig. 5 a longitudinal section taken on line 5—5 of Fig. 3; Figs. 6 and 7 are perspective views of fragmentary portions of the hopper and feed mechanism; Fig. 8 is a plan sectional view of the lower half of the agitator chamber; Figs. 9 and 10 are fragmentary longitudinal sectional views taken on line 9—9 of Fig. 3, showing the cut-off or second drop in different positions; Fig. 11 is a perspective fragmentary detail view of one of the hopper sections; Fig. 12 is a fragmentary transverse sectional view taken on

line 12—12 of Fig. 5; Fig. 13 a plan view, shown partly in section, of the side arms, and their adjacent connections; Fig. 14 an elevation of one of the side arms; and Fig. 15 an enlarged view of the indicator dial.

Referring to the drawings, the device is provided with handles 1, 1, adjustably secured at or near their lower ends respectively to the upwardly and rearwardly extending ears 2, 2 of the wheel arms 3, 3, by means of the bolts 4, 4 and 5, 5 respectively. The side arms 3, 3 have inwardly turned top web portions or flanges 6, 6, and are shaped into bearing chambers 7, 7, and semi-cylindrical axle covers 8, 8 at their forward extremities. The right hand side arm is further shaped into large and small gear covers 9, 9', adjacent to the bearing chamber, and is recessed at 10, beneath the smaller gear cover, and in the rear of the bearing chamber 7, forming another bearing chamber. The rearward end of each side arm is curved inwardly and terminates in a vertical plate 11, having a vertical slot 12 and a series of longitudinal recesses 13, 14 and 15 (Fig. 14). Both side arms are apertured at 16, 16 near their forward extremities, and projecting outwardly from the end of the bearing chambers 7, 7 are the supports 17, 17.

Journalled in the bearing chambers 7, 7 is the shaft or axle 18, having longitudinal ribs 19, 19, which ribs have their outer extremities partially inclosed by the axle covers 8, 8. Integral with the shaft 18 is the face gear 20, the inner side of which is radially grooved to receive the edges of one side of the spokes 21 of the wheel 22. A circular plate 23, having radial grooves therein, embraces the opposite edges of the spokes, and is riveted to the inner side of the gear 20, as indicated at 24.

A leaf guard 25 has its extending toe or forward portion 26 looped in advance of the wheel 22 and its sides straddling the forward portion thereof, and passing over the lugs 17, 17, has its extremities 27, 27 turned inwardly and journalled to swing in the recesses or orifices 16, 16 of the side arms 3, 3.

The hopper consists of two sections *a* and *b*, the rear section *a* having at its lower portion an integral, cylindrical extension, forming a part of the hill and drill feeding mechanism, and the front section *b* having a depending integral extension forming a box-like portion, to each side of which is attached the rear plate of each respective

side arm 11, by means of a single bolt, in a manner to be hereinafter described. The hopper *a*, *b* has a cylindrical body portion 28, the upper portion 29 of which is contracted to form an opening 30. A projecting bead 31 circumscribes the juncture between the cylindrical and contracted portions, the part *a* having a recess 32 therein, into which extends the pin 33 of the part *b*. The lower portion of the part *b* has a normally inwardly tapering portion 34. The rear section *a* of the hopper has its lower portion 35 normally tapering inwardly, but is shaped on its right hand side so that its edge will coincide with the corresponding edge of the front section *b*. Integral with and projecting rearwardly from the rear right hand lower portion of the hopper *a* is the curved cover 36, and from the rear of the cylindrical portion of the section *a* projects a curved shelf 37, the rear of the section *a* being depressed in order to enable the shelf to be of constant width instead of curved to conform to the outer surface of the hopper. The lower portion of the section *a* has a depression 38 formed therein, in the end of which is an aperture 39. In the front section *b* is another aperture 40. A tiebolt 41, passing through these apertures, holds the two sections together.

The downward extension of the front section *b* has its rear portion formed into a chute opening rearwardly and its front portion formed into a rectangular box-like structure 42, having ribs 43 extending longitudinally along each side thereof, which ribs are adapted to fit in one of the longitudinal recesses 13, 14 and 15 of the plates 11, of the side arms 3, 3 respectively. Through the vertical slots in the plates 11 and through apertures 43', 43' in the rectangular box-like structure, passes a bolt 44, to adjustably clamp the plates 11 of the side arms 3, 3 to the sides of the rectangular structure, it being understood, of course, that this adjustment is effected by so locating the plates 11 that the ribs 43, 43 will fit into any desired pair of the series of recesses 13, 14 and 15. The lower side of the box-like structure 42 is open, and has a tongue 44' projecting from the wall thereof. Below the box-like structure 42, on the depending integral extension of the section *b* is an apertured projecting nipple 45, forming a recess between itself and the tongue 44', and another recess between itself and the front surface of the lower extremity of the depending extension.

The covering roller 46 has a concave rim, its bearings being journaled in the fork or yoke 47, the rear ends of which are joined by a curved scraper 47', conforming to the inner curvature of the roller, and are also joined by an upwardly and rearwardly extending guard 48, also curved to conform to the cur-

vature of the roller, and having a downwardly projecting apertured tongue 48'. The forward extremities of the fork are converged inwardly to embrace the sides of the chute, and terminate in a cross piece 49, journaled in the upper recess formed by the nipple 45.

The coverer comprises a pair of downwardly and outwardly extending blades 50, having their lower edges inclined upwardly and rearwardly when in contact with the ground and joined by an upwardly curved member 51. The forward extremities of the blades 50, 50 are joined by an upwardly curved member 52, having its intermediate portion reduced to cylindrical form to swing in the recess below the nipple 45.

A plow having rearwardly extending shares 53, 53, and its under surfaces 54, 54 converging to form an under edge 55, is securely fastened by means of a single bolt 56 passing through the nipple 45 and the vertically slotted upwardly projecting member 57, integral with the plow shares.

Below the chamber in the hopper, the section *a* extends downwardly and has a circular opening therein, from the periphery of which projects a rearwardly extending cylinder shell 60, having a lateral opening 61 in the side thereof, the said opening having in its lower edge a recess 62, forming shoulders 63, 63 on each side thereof. The rearward end of the cylindrical chamber 60 is closed, and has an apertured nipple 64 projecting therefrom. The lower portion of the vertical wall 58 has an apertured lug 65 depending therefrom. Within the rectangular opening 61 of the cylindrical chamber 60 and coinciding with the edges thereof, so as to make a flush surface, is the curved plate 66. Integral with said plate 66 is the curved rib 67, running longitudinally along the top thereof, and having outwardly extending lugs 68 projecting beyond the lateral edges of said plate and bearing on the adjacent surfaces of the cylindrical portion 60. On the upper extremity of the curved plate 66, and integral therewith, are the outwardly extending flanges 69, 69, which flanges bear against the outer surface of the cylindrical chamber 60 for a short distance, and then project away from the surface of the cylinder, forming an arm 70, having its extremity 71 apertured and turned downwardly in a direction tangent to the surface of the chamber 60. The plate 66, rib 67, lugs 68, flanges 69, arms 70 and 71 are integral and embrace the cylinder, and hold the plate 66 movably within the opening by means of the bolt 72 passing through the aperture in the member 71 through the coils of the spiral spring 73.

Between the flanges 69, 69 and the arms 70 is an upwardly extending pointer 74, having its upper extremity turned forwardly to

form an indicator 75 to move over the edge of the shelf or index 37, curved to conform with the swing of said indicator. Projecting forwardly from the downwardly turned extremity 71 of the arm 70 is the fork 76. The lower portion of the indicator or pointer 74 is recessed or orificed at 77, for the passage of a screw bolt 78, the extremity of which acts as a stop when the pointer is swung over to the right, bringing it into contact with the curved cover 36. In order that the screw may not work loose, the spring 79, illustrated in Fig. 6, is passed around through a niche in the rear of the pointer, and has its extremities encircling said threads.

The upper end of the chute depending from the section *b* of the hopper has its upper walls 80, 80 spread apart to incase the cylindrical shell 60 and the projecting wall 81, integral with and projecting rearwardly from the lower portion of section *b* of the hopper. Projecting rearwardly from the extreme upper left hand portion of the wall casing on the front of the casing formed by the side walls 80, 80, are a pair of recessed lugs 82, 82, in which recesses is journaled the pin 83, around the intermediate portion of which is coiled a spring 84, having one extremity bearing against the front wall and the other extremity hooked over the flat horizontal arm 85, which extends downwardly at its rearward extremity, being then twisted at right angles into a transverse plane, as indicated at 86, and having its lower extremity 87 bent forwardly to form a cut-off at the upper portion of the feed chute.

The rear portion of the casing formed by the spreading of the sides of the feed chute is closed by a plate 88, having its upper edge cut to conform to the surface of the shell 60, a portion thereof extending further upwardly, forming a vertical edge which acts as a guide for the upper portion of the vertical arm of the swinging cut-off 85. Tongues 89, 89, projecting laterally from said plate, are clenched around the outwardly flanged edges 90, 90 of the upper walls of the chute. A shaft 91, having its forward end journaled in the recess 10, and carrying a beveled gear meshing with the face gear 20, passes through the aperture 92 in the section *b* and the apertured nipple 64 of the shell 60. Secured to this shaft, and within the cylindrical shell 60, are the agitator blades 93, 93, and on the end of the shaft 91 and on the outside of the nipple 64 is the cam wheel 94, having blades 95, of peculiar construction, which will hereinafter be more fully described.

An angle lever, having arms 96 and 97 and an inwardly and laterally projecting pin 98, is pivoted, by means of a bolt 99, to an apertured lug 100, projecting from the lower

right hand side of the section *b*. The pin 98 on the extremity of the rearward arm 96 loosely engages the recess in the fork 76. The forwardly projecting arm 97 of the angle lever is apertured at its extremity, to loosely engage the forward extremity of a rod 101, which rod passes through an eye 102 on the right hand handle 1, and terminates in a hook 103 adjacent to the rearward extremity of the handle 1. Bolted to the downwardly and forwardly projecting tongue 48' is a flat bar 104, oblong in cross section extending laterally toward the left, but twisted through an arc of 180 degrees adjacent to the tongue, so that its laterally projecting portion 105 has its broader surfaces extending transversely downwardly and rearwardly.

Slipped over the outer extremity of the bar 105 is the marker arm 106, having its forward end terminating in a pair of apertured collars 107, 107, having recesses therein of such a configuration that the said marker will extend downwardly and rearwardly from the bar 105, and at the same time closely engage the bar to prevent any vertically swinging movement thereof. The recesses in the apertured collars are doubled in order that the marker arm may be turned over to engage the bar, should it be desired to have the marker extend upwardly out of contact with the ground instead of downwardly. The marker arm is fastened to the bar 105 by means of a pin 108, passing through apertures 109 therein. A chain 110, fastened to an intermediate portion of the marker arm, connects the same with a cross bar 111, upon which the chain is wound. The marker arm 106 terminates at its rear end in rearwardly and vertically projecting blades spread to form a miniature plow for scoring the ground.

The wheel 94, journaled on the rearward extremity of the shaft 91 on the exterior of the nipple 64, comprises a hub portion 120, each end having a pair of transverse recesses 121, 121, through either pair of which may pass a pin 122, to secure the same to the shaft 91, and a plurality of outwardly extending members, each member comprising a longitudinal web 123 and a transverse blade 124 arranged at right angles thereto. Some of the outwardly extending members may also have another longitudinal web 125 and transverse blade 126 at the side thereof and integral therewith, which blades are arranged in different planes from the preceding blades, so that the rotation of the wheel 94 will present in one transverse plane an entirely different arrangement of blades than that presented in a parallel transverse plane. The hub portion 120, being recessed at each end, is reversible on the extremity of the shaft 91.

The operation of the device is as follows:

Referring to Figs. 6, 7, 8 and 15, the index pointer is turned along the scale on the edge of the plate 37, to indicate the character of the seeds, and whether they are to be sown in hills or drills; for instance, should it be desired to sow parsnip seeds, the pointer would be turned to 34 for hills, as is indicated in the first column after the word parsnip, and to 35 for drills, as is indicated in the second column. The turning of the index pointer moves the cover or valve, as indicated in Fig. 7 and Fig. 8, leaving an opening for the discharge into the chute, permitting one seed only to pass there-
 15 through from the agitator chamber, the operation of which will be hereinafter described.

The bottom of the chute is closed by the cut-off 87, which is operated by the blades on the hub of the wheel 94 tripping past the laterally projecting tongue on the horizontal arm 85, causing the cut-off to swing rearwardly against the resistance of the spring 84 on the pin 83 as a center. The vertical plate 88 contains a slot in which the horizontal arm 85 is guided against lateral movement. The blades on the wheel 94 are arranged around the hub according to a standard scale so that, if it is desired to drill, a wheel having enough blades to trip the cut-off every time a single seed is dropped thereon is substituted, which will cause the seeds to be sown at a certain distance apart.

Should it be desired to plant the seeds in hills instead of drills, a wheel having a less number of blades is utilized, thus leaving time for several seeds to accumulate on the cut-off, before the same is tripped, and then to drop them all in a pile on the ground. As hereinbefore stated, I may employ a wheel having a peculiar construction, in that the blades extending therefrom are arranged in two sets, side by side, the one side containing a certain number of blades, and the other side containing a different number of blades, and in order to use the two sides alternately, it is necessary to take the wheel off the end of the shaft by removing the pin and placing the wheel back again reversed; as the wheel revolves, it causes the shaft geared thereto to revolve and rotate the agitator blades inside of the agitator chamber, which opens into the lower end of the chute, the revolving shaft is extended through this chamber and likewise causes the revolution of the wheel on the extremity thereof.

As heretofore stated, when it is desired to sow a certain character of seeds in hills or drills, the index is set as heretofore explained, which causes the cover to move so that the agitator chamber will present a rectangular orifice having a recess in the lower end thereof. As the agitator wheels revolve, the seeds come down from the hopper

into the chamber, and are thoroughly agitated by the blades, and the orifice, on account of its peculiar configuration, will permit one seed at a time to pass therethrough into the chute to sow a hill or drill, in the manner hereinbefore described. When the planter is pushed forward over the field, the plow digs a furrow, throwing dirt up on each side thereof, and ironing the same down with the under surfaces. In the meantime, the seed or seeds have been dropped therein, and the coverer blades 50, 50 draw the thrown up sides together, closing the furrow, which is rolled down by the concave roller passing over the closed furrow.

If it is desired to convert the device into a wheel hoe cultivator and plow, the bolt 44 is removed, separating the wheel arms and gearing mechanism between the same from the rest of the planter, and a wheel hoe cultivator and plow, having a box-like structure, as described herein, is fitted between the wheel arms and the bolt replaced.

When it is desired to obtain access to the feed mechanism, the rear part of the hopper α , together with the agitator chamber and index mechanism, may be removed entirely from the machine by removing the bolt 41.

The rear end of the roller bearing yoke is turned downwardly in the rear of the bearings and curved inwardly across the face of the roller, and acts as a scraper immediately after the face leaves the ground.

The plow coverer and roller yoke may all be removed by the removal of the bolt.

Although I have shown only one form in which this invention may be constructed, it is obvious that many changes might be made in the details of the construction illustrated without departing from the spirit of this invention or the scope of the appended claims.

Having now described my invention, what I claim and desire to protect by Letters Patent of the United States, is:

1. In a seed planter, a supply hopper opening into a cylindrical agitator chamber, the said chamber having one side thereof apertured to communicate with a feed chute, a movable valve plate shaped on a curve concentric with the axis of the cylinder and which when in its closed position will cause said aperture to present a restricted substantially rectangular opening, one edge of said aperture being provided with a recess.

2. In a seed planter, a hopper having a cylindrical chamber opening into its lower portion, the said chamber having its cylindrical wall apertured to open into a chute, a cover curved to said cylinder and arranged to vary the degree of the aperture, a dial, a pointer rigid with said cover, having one end adjacent to said dial, an arm rigid with said pointer embracing a portion of said cylinder, a yielding resistance operating in connection with said arm to hold the cover

in frictional engagement with said cylinder, a notch in the side of said arm, a bell crank lever having one end thereof located in said notch to move the said arm and cover circumferentially of the agitator chamber, and means for operating said bell crank lever.

3. In a seed planter, a hopper made up in two sections, one section having depending therefrom a chute closed along its front portion, the said portion having depressions therein, in which are journaled a coverer and a roller yoke, and an opening plow straddling said chute for holding said coverer and said yoke in position and secured thereto by a bolt.

4. In a seed planter, a hopper made up in two sections, one section having depending therefrom a chute closed along its front portion, a coverer and a yoke journaled to swing against said front portion and held in position thereon by an opening plow.

5. In a seed planter, a hopper made up in two sections, one section having depending therefrom a chute closed along its front portion, a coverer and a yoke journaled to swing against said front portion and held in position by an opening plow, and means for fastening said plow in position.

6. In a seed planter, a vertical casing comprising a front section, a rear section and means to hold said sections together, the said front section having a depending extension forming a chute, and the said rear section having an extension forming an agitator chamber, and the upper portions of the two sections together forming a hopper.

7. In a seed planter, a casing formed of two vertical sections, one of said sections being provided with a downward extension forming a chute and the other of said sections being provided with an extension forming an agitator chamber, the upper portions of said sections uniting to form a hopper and means to secure said sections together.

8. In a seed planter, the combination with side arms of a vertical hopper comprising a front section and a rear section, the said front section having a depending extension secured to said side arms and the said rear section having an extension forming an agitator chamber, and means to secure said sections together.

9. In a seed planter, the combination with side arms of a vertical hopper comprising a front section and a rear section, the said front section having a depending extension secured to said side arms and the said rear section having an extension forming an agitator chamber, and a bolt to secure said sections together.

10. In a seed planter, the combination with side arms of a hopper comprising two sections, one of said sections being secured to said side arms and the other of said sections being provided with an extension forming

an agitator chamber, and means to secure said sections together.

11. In a seed planter, the combination with side arms of a hopper comprising two sections, one of said sections being secured to said side arms and the other of said sections being provided with an extension forming an agitator chamber, and a bolt passing through said sections to secure said sections together.

12. In a seed planter, the combination with side arms of a hopper comprising front and rear sections, the said front section being secured to said side arms and being provided with a depending downward extension forming a chute and the said rear section being provided with an extension forming an agitator chamber communicating with said hopper and said chute, and a coverer, a roller yoke, and a plow secured to said front section.

13. In a seed planter, the combination with side arms of a hopper comprising front and rear sections, the said front section being secured to said side arms and being provided with a depending downward extension forming a chute and the said rear section being provided with an extension forming an agitator chamber communicating with said hopper and said chute, a coverer and a roller yoke journaled against said front section, and a plow secured to said front section and holding said coverer and said yoke in position.

14. In a seed planter, the combination with a pair of side arms of plates rigid with said arms, each plate having parallel horizontal recesses and a vertical slot, a hopper having a projection with a rib upon each side thereof engaging said recesses, and a bolt passing through said vertical slots in said plates and through the said projection to hold said hopper in position.

15. In a seed planter, the combination with a pair of side arms, of a hopper, and a single member in vertical alinement with said hopper for supporting said hopper between said arms.

16. In a seed planter, the combination with side arms, of a hopper and a bolt in vertical alinement with said hopper for holding said hopper rigidly between said side arms.

17. In a seed planter, the combination with side arms, of a hopper comprising two sections, one of said sections being secured to said side arms and the other of said sections being secured to said first mentioned section.

18. In a seed planter, the combination with side arms, of a hopper comprising two sections, one of said sections being secured to said side arms and being provided with a downward extension forming a chute, and the other of said sections being secured to said first mentioned section and being pro-

vided with an extension forming an agitator chamber communicating with said chute.

19. In a seed planter, the combination with a pair of side arms, of recessed plates rigid therewith, a hopper having projections engaging in said recesses, and means to hold said hopper and said side arms together.

20. In a seed planter, the combination with a pair of side arms, of recessed plates rigid therewith, a hopper having a ribbed projection engaging in said recesses, and a bolt passing through said arms and said projection to hold said hopper in place.

21. In a seed planter, the combination with a pair of side arms having recessed plates rigid therewith, of a hopper having ribs engaging said recesses, and a bolt passing through said arms and said hopper to hold said hopper in position, said hopper being freely removable upon the removal of said bolt.

22. In a seed planter, the combination with a pair of side arms, of a hopper comprising two sections, a bolt passing through said arms and through one of said sections, forming the sole means for holding said arms and said section together.

23. In a seed planter, the combination with a hopper, of a pair of arms forming the sole support therefor, and a bolt for holding said arms and said hopper together.

24. In a seed planter, the combination with a pair of arms, of a hopper comprising two sections, one of said sections having a depending extension secured to said arms, and the other of said sections having an extension forming an agitator chamber, and means to secure said sections together.

25. In a seed planter, the combination with a pair of arms, of a hopper comprising two sections, one of said sections being secured to said arms and the other of said sections having an extension forming an agitator chamber.

26. In a seed planter, the combination with a pair of arms, of a hopper comprising two sections, one of said sections being secured to said arms and being provided with a downward extension forming a chute, and the other of said sections being provided with an extension forming an agitator chamber communicating with said hopper and said chute.

27. In a seed planter, the combination with a pair of arms, of a hopper comprising two sections, one of said sections being secured to said arms and being provided with a downward extension forming a chute, and the other of said sections being provided with an extension forming an agitator chamber communicating with said hopper and said chute, and a coverer, a roller yoke and a plow secured to said downward extension.

28. In a seed planter, the combination with a hopper having a downward extension, of

a coverer, a roller yoke and a plow secured to the front side of said downward extension.

29. In a seed planter, the combination with a hopper, having a downward extension forming a chute, of a coverer, and a roller yoke journaled against said downward extension, and a plow secured to said extension and holding said coverer and said yoke in position.

30. In a seed planter, the combination with a fixed member, of a coverer and a roller yoke journaled against said fixed member, and a plow secured to said fixed member holding said coverer and said yoke in position.

31. In a seed planter, the combination with a pair of side arms, of plates rigid therewith, each plate having a recess and a transverse slot, a hopper provided with a rib upon each side thereof engaging in said recess, and a bolt passing through said slots and through said hopper for holding said hopper in position.

32. In a seed planter, the combination with a pair of side arms, of a hopper secured between said arms, and means for the vertical adjustment of said hopper with respect to said arms.

33. In a seed planter, the combination with side arms, of a hopper comprising front and rear vertical sections, the said front section being secured to said side arms and being provided with a depending downward extension forming a chute, and the said rear section being provided with an extension forming an agitator chamber communicating with said hopper and said chute, and a coverer, a roller yoke and a plow secured to the front side of said front section.

34. In a seed planter, the combination with a fixed member, of a coverer and a roller yoke journaled against the front of said fixed member, and a plow secured to the front of said fixed member, and holding said coverer and said yoke in position.

35. In a seed planter, the combination with a fixed member, of a coverer and a roller yoke journaled against the front of said fixed member, and a plow secured to the front of said fixed member, and holding said coverer and said yoke in position, said coverer and said yoke being free to oscillate.

36. In a seed planter, the combination with a fixed member, of a coverer and a roller support journaled upon said fixed member, and a plow secured to said fixed member and holding said coverer and said yoke in position, said coverer and said yoke being free to oscillate.

37. In a seed planter, a vertical casing comprising front and rear vertical sections, means to hold said sections together, the said front sections having a depending extension forming a chute, and said rear section having a section forming an agitator chamber

and the upper portions of the two sections together forming a hopper, a pair of side arms, and a single bolt between said front section and said side arms for supporting
5 said casing.

38. A seed receptacle having an opening therein to permit the dropping of seeds, said opening being bounded by four edges meeting in substantially rectangular corners, and one of said edges being provided with a recess, and means to vary the extent of said
10 opening.

39. A seed receptacle having an opening therein to permit the dropping of seeds, said opening being bounded by four edges meeting in substantially rectangular corners, and one of said edges being provided with a centrally arranged curved recess and means to vary the extent of said opening.
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40. In a seed planter, a cylindrical chamber having its cylindrical wall apertured to permit seed to fall therefrom, a cover bent to a curve coincident with that of the cylindrical chamber, a part of said cover fitting
20 in said aperture in said chamber, and means to hold said cover in adjustable engagement with said chamber.

41. In a seed planter, the combination with a feed chute for seed, of a cut-off in said chute for controlling the passage of seed
30 therethrough comprising a substantially flat horizontal arm pivoted at one end and extending downwardly at its other end, said latter end being twisted at right angles to the plane of the upper portion of the arm
35 to form a gate in said chute.

42. In a seed planter, the combination with a feed chute for seed, of a cut-off in said chute for controlling the passage of

seed therethrough comprising a substantially
40 flat horizontal arm pivoted at one end and extending downwardly at its other end, said latter end being twisted at right angles to the plane of the upper portion of the arm to form a gate in said chute, and means to
45 yieldingly restrain the oscillation of said gate.

43. In a seed planter, the combination with a feed chute for seed, of a cut-off in said chute for controlling the passage of
50 seed therethrough comprising a substantially flat horizontal arm pivoted at one end and extending downwardly at its other end, said latter end being twisted at right angles to the plane of the upper portion of the arm
55 to form a gate in said chute, means to oscillate said gate, and means to yieldingly restrain the oscillations of said gate.

44. In a seed planter, the combination with a chute, of a movable gate extending
60 transversely in said chute for controlling the flow of seed therethrough, the wall of said chute being recessed to receive the edge of said gate.

45. In a seed planter, the combination
65 with a chute, of a movable gate extending transversely in said chute for controlling the flow of seed therethrough, the wall of said chute being recessed to receive the edge of said gate and to form a shoulder adjacent
70 the inner surface of said gate.

In witness whereof I have hereunto set my hand this 26th day of March A. D. 1907.

SAMUEL L. ALLEN.

Witnesses:

ALSTON B. MOULTON,
ALEXANDER PARK.