

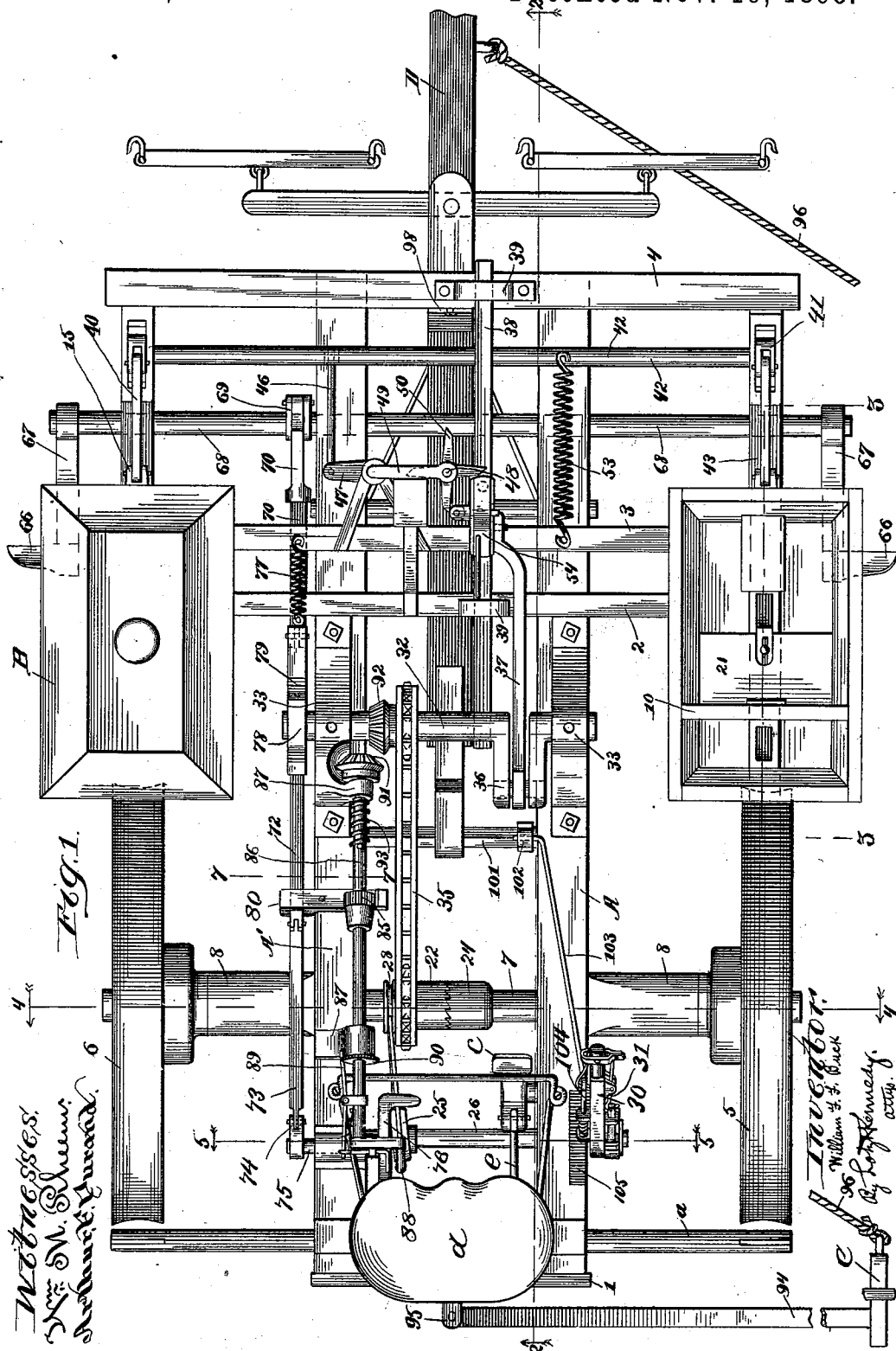
(No Model.)

4 Sheets—Sheet 1.

W. F. F. BUCK.
CORN PLANTER.

No. 550,015.

Patented Nov. 19, 1895.



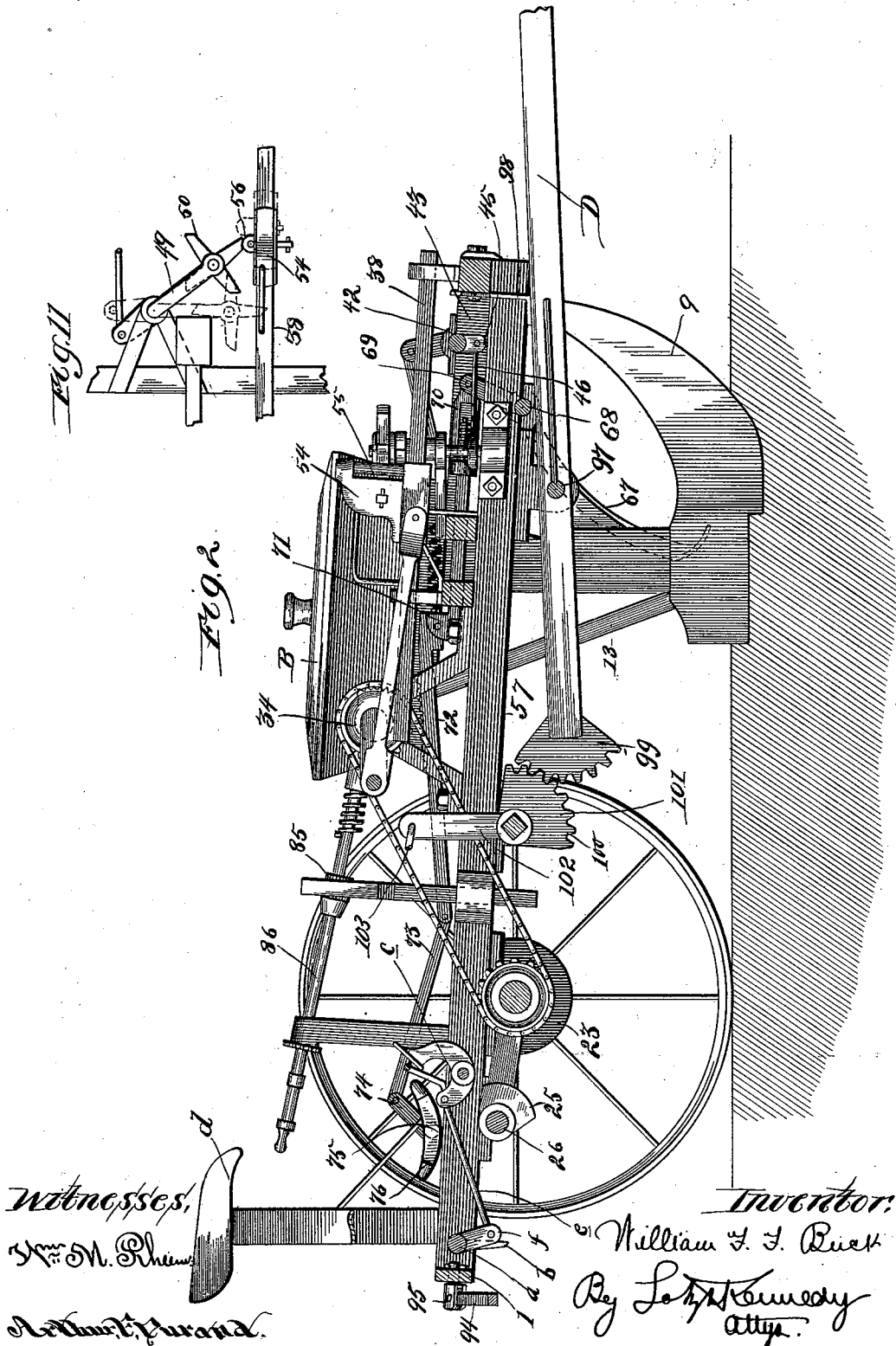
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4 Sheets—Sheet 2.

W. F. F. BUCK.
CORN PLANTER.

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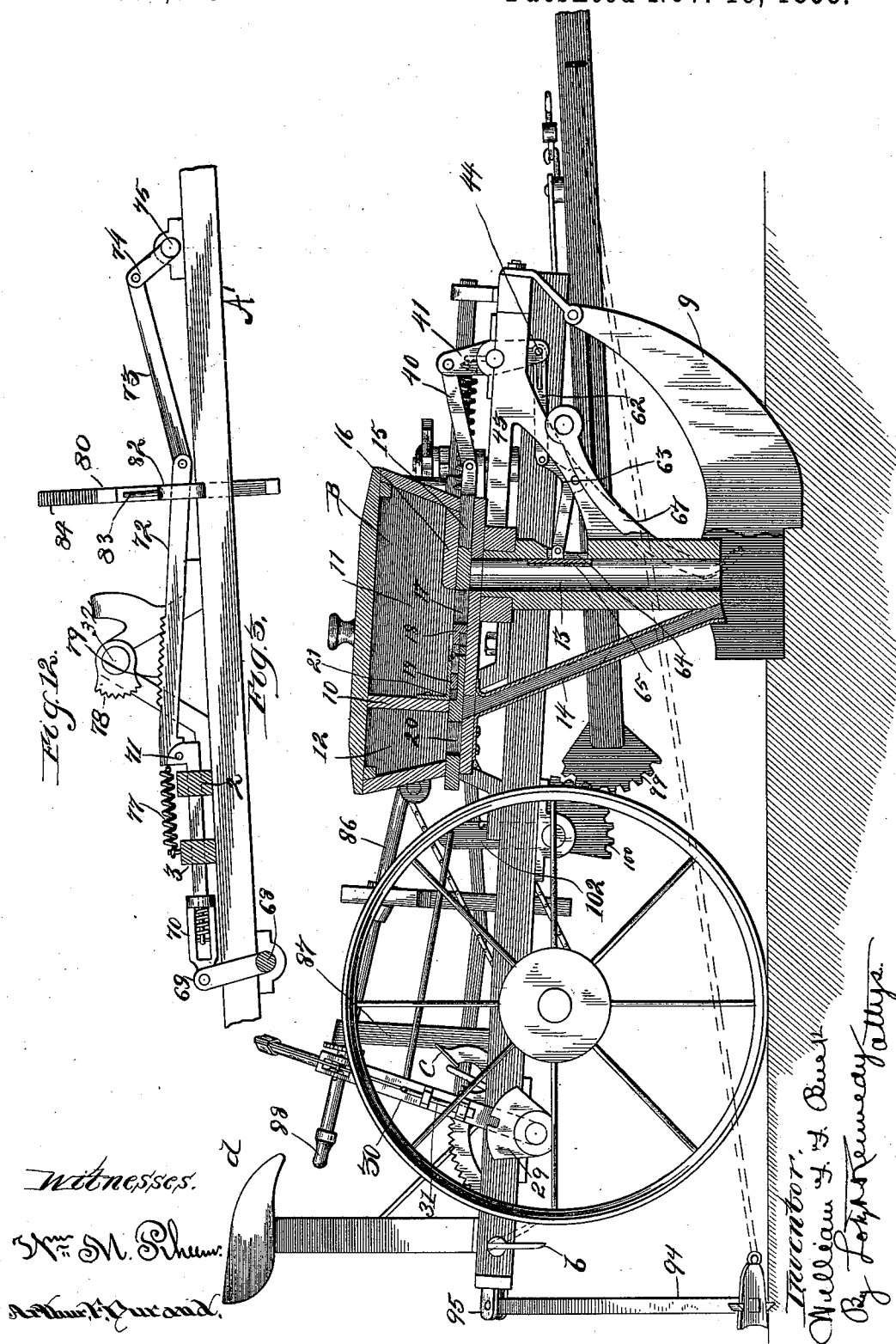
Patented Nov. 19, 1895.



4 Sheets—Sheet 3.

No. 550,015.

Patented Nov. 19, 1895.



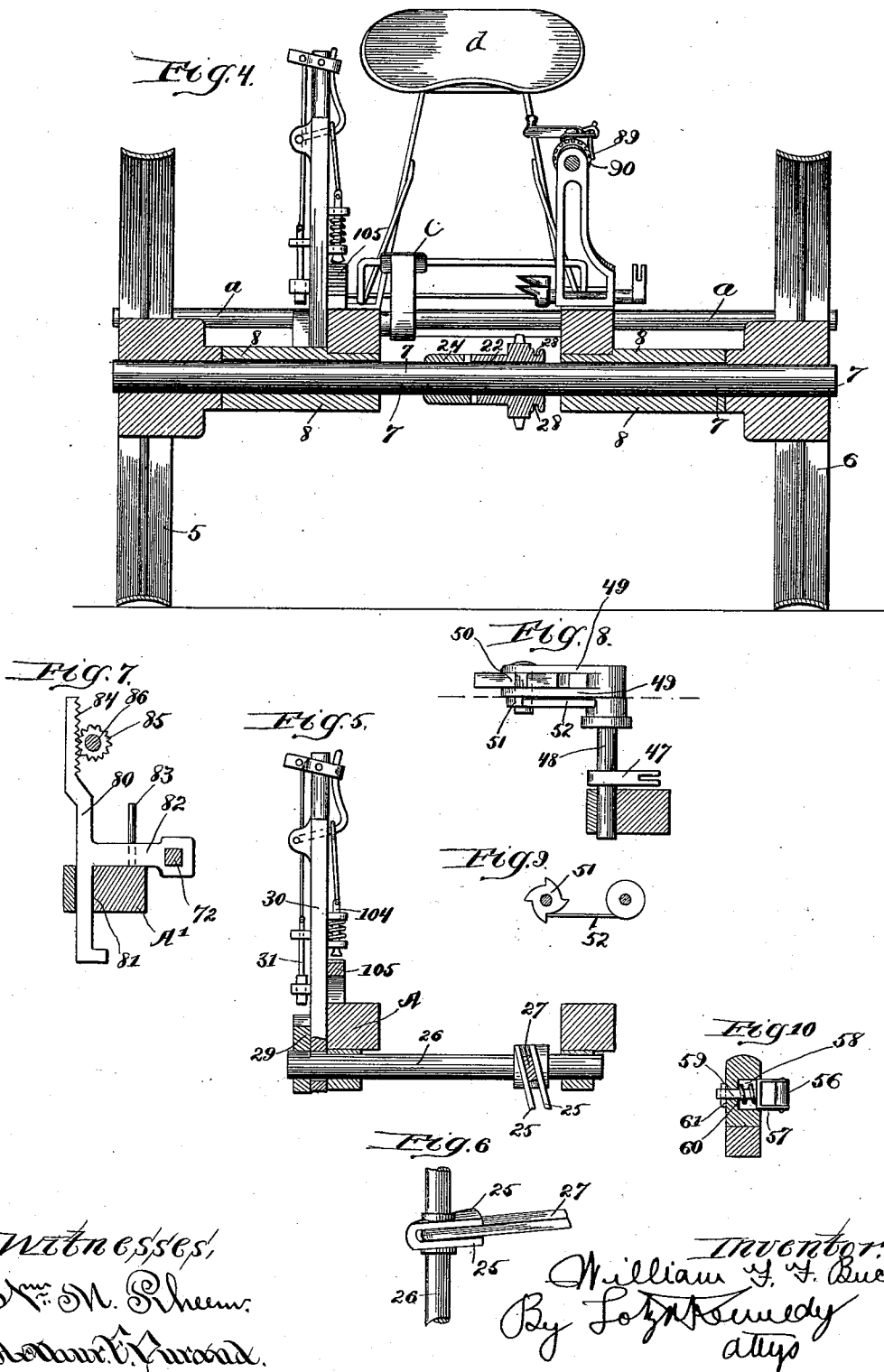
(No Model.)

4 Sheets—Sheet 4.

W. F. F. BUCK.
CORN PLANTER.

No. 550,015.

Patented Nov. 19, 1895.



UNITED STATES PATENT OFFICE.

WILLIAM F. F. BUCK, OF KELSO, MINNESOTA.

CORN-PLANTER.

SPECIFICATION forming part of Letters Patent No. 550,015, dated November 19, 1895.

Application filed April 4, 1892. Serial No. 427,659. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM F. F. BUCK, a citizen of the United States, residing at Kelso, in the county of Sibley and State of Minnesota, have invented certain new and useful Improvements in Corn-Planters; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to a novel construction in corn-planters, the objects being to provide a device of this character of improved and efficient construction that is adapted to automatically drop the corn into the furrow, cover the same, and to mark at the end of a row just planted the points where the corn has been dropped, so as to determine the place of planting the corn in the next row.

To these and other useful ends my invention consists in the features of construction and combinations of parts hereinafter fully described and specifically claimed.

In the accompanying drawings, illustrating my invention, Figure 1 is a top plan view of the corn-planter constructed in accordance with my invention. Fig. 2 is a longitudinal vertical section of the same, taken on the line 2 2 of Fig. 1. Fig. 3 is a side elevation and partly in section on the line 3 3 of Fig. 1. Fig. 4 is a vertical transverse section taken on the line 4 4 of Fig. 1. Figs. 5 to 12, both inclusive, illustrate detail views.

Referring to said drawings, A A' indicate two longitudinal beams composing the main frame of the device. Said beams are connected together at their rear ends by cross-pieces 1, and near the forward ends thereof are located three cross-supports 2, 3, and 4, the said supports 2 and 3 being located a little in advance of the middle of the beams, while cross-support 4 is located at the forward ends thereof. These cross-supports are all secured rigidly to the said beams and extend on both sides thereof to about the width of the corn-planter.

The corn-planter is supported at its rear portion by the wheels 5 and 6, one of said wheels being rigidly secured to the axle or shaft 7, that is supported in bearings 8, secured to the beams A A', while the other wheel may be secured to said shaft by a pawl and

ratchet. The said wheels 5 and 6 are of the ordinary construction, embracing a wide concave tire that is employed to close or cover up the furrow in the usual manner. A rock-shaft *a* is mounted upon the rear end of the beams A A' and is provided at its outer ends with scraping-plates *b*, that are adapted to be thrown against the concave tires of the wheels to remove the dirt therefrom. A vibrating foot-piece *c*, that is located in position to be operated by the driver from the seat *d*, is connected by means of the rod *e* with an arm *f* upon said rock-shaft *a*, so that the scraping-plates can be thrown against the wheels at will.

The runners 9 are secured to the forward end of the machine and just in front of each of the wheels 5 and 6 and, like the ordinary corn-planter, serve to open a furrow for the dropping of the corn, the rear end of said runners 9 being bifurcated in the usual manner. Above said rear end of the runners and supported upon the cross-supports 2 and 3 are located the seed-boxes B.

In accordance with my invention the seed device is adapted for planting either corn or various other seeds, such as squash, and the seed-boxes B are therefore divided into two compartments by transverse partition 10.

The forward compartment 11, which is larger than the rear compartment 12, is adapted to receive the corn, and a tube 13 leads from said compartment 11 to the rear end of the runners 9, while a small tube 14 leads from the compartment 12 to said runners.

The device for feeding the corn into the tube 13 consists of a reciprocating slide 15, that moves back and forth, and is located in the bottom of the said compartment 12 between said bottom and the guide-piece or cut-off 16 secured therein and extending over the upper end of the tube 13. An opening 17 is made in the slide 15 and normally stands away from said tube 13 and from under the guide 16, so that the corn or other seed can fall into the said opening 17, as shown in Fig. 3. It will thus be noted that when the slide 15 is moved forward the corn that is in the opening 17 will be carried forward and dropped into the tube, while the guide 16 will prevent more corn from falling therein until the slide returns to the position shown in said Fig. 3. I

have provided means for adjusting the size of the opening 17, whereby the amount of corn to be dropped each time can be regulated. To this end a movable piece 18 is located within the opening 17, and is provided with a slotted stem 19, and is secured within a longitudinal recess in the slide 15. It will thus be seen that by reason of the slotted connection between the movable piece 18 and slide 15 the said movable piece can be moved back or forth and enlarge or decrease the size of the opening 17.

The slide 15 extends beneath the partition 10 and is provided with an opening 20, that is normally located within the compartment 12 of the seed-boxes. Just at the forward end of said compartment the upper end of the tube 14 communicates with the same, so that when the slide 15 is moved forward any seed that may be held within the opening 20 thereof will be allowed to drop in said tube. It will be noted that when the slide is at the forward limit of its movement part of the opening 20 will be located in compartment 11, and to cover such part a plate 21 is secured within the lower rear portion of compartment 11 for such purpose.

I will now proceed to describe the devices and means whereby the seed-dropping mechanism is operated automatically during the advancement of the corn-planter.

Upon the axle 7 of the wheels is located a sliding collar 22, that is provided with a sprocket-wheel 23. The said collar is provided at one end with clutch-teeth that are adapted to be engaged by the clutch-teeth of a stationary collar 24, so that when the two are in engagement with each other said collar 22 and sprocket-wheel will revolve with the axle 7. The devices for throwing said collar into and out of gear with the clutch-collar 24 comprise the cam-surfaces 25, that are secured to a rock-shaft 26 upon the beams A and A', Figs. 1, 2, 5, and 6. These cam-surfaces 25 are rigidly secured to said rock-shaft 26, and an arm 27 is located between said cam-surfaces 25 and is loosely mounted upon said rock-shaft. The other end of said arm 27 is forked and engages an annular groove 28 upon the collar 22 of the axle 7. To one end of said rock-shaft 26 is rigidly secured a notched plate 29, and a lever 30 is loosely mounted upon said rock-shaft and is provided with a pawl 31, located to engage said notched plate 29. It will thus be seen that by connecting the lever 30 with said notched plate 29 the rock-shaft can be moved by swinging said lever, and thus the collar 22 can be thrown into or out of engagement with the clutch-collar 24 for obvious reasons. About midway between the ends of the beams A A' a shaft 32 is supported in bearings 33 upon said beams. The said shaft 32 is provided with a sprocket-wheel 34, and a sprocket-chain 35 is trained around said sprocket-wheel 34 and the sprocket-wheel 23 of the axle 7, so that when the rear sprocket-wheel

is being driven by the axle a rotary motion will be imparted to the shaft 32 through the intermediacy of the gear connection between such parts. The shaft 32 is provided with crank-arm 36, that is connected by means of a pitman 37 with a longitudinal sliding bar 38, confined by guideways 39 upon the cross-supports 2 and 4 of the frame of the machine.

It will of course be understood that an intermittent motion must be given to the slide 15 of the seed-boxes that the forward movement of said slide should be gradual, while it should be returned quickly and suddenly to its normal position, as shown in Fig. 3.

To accomplish the above-named objects in a simple, efficient, and certain manner, I have constructed the devices which will now be described.

The forward end of the slide 15 is connected by means of the link 40 with an upwardly-projecting arm 41 upon the rock-shaft 42. Said rock-shaft 42 is mounted in bearings at its ends upon side supports 43, that extend between the ends of the cross-supports 3 and 4. The said side supports 43 are vertically slotted, and another arm 44 is secured to said rock-shaft 42 and extends down through the slotted portion of the said side support 43 and will more fully be explained hereinafter. Adjacent the beam A' the said rock-shaft 42 is provided with a downwardly-projecting arm 45, that is pivotally connected by a link 46 with one end of an arm 47, that is rigidly secured upon an upright shaft 48, supported in bearings upon the beam A' and cross-support 3, Figs. 1, 2, and 8. The upper end of said upright shaft 48 is provided with two horizontal arms 49, that extend toward the sliding bar 38, heretofore referred to, and between the outer ends of said arms 49 is pivoted an armed wheel 50. The pivot of said armed wheel extends below the lower arm 49 and is provided with a ratchet-wheel 51, that is engaged by a spring-pawl 52, Fig. 8. The said teeth of the ratchet-wheel are so arranged that the armed wheel will only be permitted to turn to the right, or, in other words, the arms of the said armed wheel 50 are only permitted to move to the rear on the side adjacent the bar 38.

The slides 15 of the boxes and the connecting parts above described are all held normally in the relative positions they will assume when the slide is at the backward limit of its movement, and this is accomplished by a spring 53, that is connected with the projection on the upper side of the rock-shaft 42, and with the cross-support 3, located in the rear thereof. The action of said spring 53 turns the rock-shaft 42 in its bearings and draws the slide 15 back in an obvious manner, while at the same time the link 46 and arm 47 will be moved to the forward limit of their movement, and the upright shaft and arms 49 on the upper end thereof will be moved accordingly. The reciprocating motion of the bar 38 serves to move the arm 49

intermittently, whereby the slide 15 of the feed-boxes will be moved forward and then returned by the action of the spring 53. This occurs while the machine is moving forward and the sprocket-wheel 28 turns with the axle. It will be understood, of course, that various devices could be employed for communicating the intermittent motion to the arms 49; but as a convenient and preferable construction I have secured to said bar 38 an uprising projection 54, that is provided at its forward end with an upright antifriction-roller 55, located to engage one of the arms of the armed wheel 50. It will be noted that as the bar 38 moves forward the said antifriction-roller 55 will engage the rear edge thereof, Fig. 1, and during the forward movement of the said bar and the antifriction-roller the arm 49 will be moved forward owing to the pawl-and-ratchet connection between said armed wheel and arm 49. In Fig. 11 is shown in full and dotted lines the different positions these parts may assume during their several moments. When the bar 38 is moved forward far enough, the arm of the armed wheel that engages the antifriction-roller will at last be released therefrom and also from the spring-pressed movable antifriction-roller 56 in the rear thereof. The spring 53 will return the rock-shaft and armed wheel and connected parts to their normal condition. (Shown in Fig. 1.) The forward movement of the armed wheel moves the slide 15 until the opening therein is located over the tube 13, so that the corn will drop through said tube into the furrow made by the runner. When the armed wheel is released, the parts will quickly return to their normal position by means of the spring 53. The bar 38 then commences to return or move backward by means of its crank connection with the shaft 32, and the movable projective antifriction-roller 56, Fig. 10, first strikes the projecting arm of said armed wheel, which it will move to the rear, (by reason of the pawl-and-ratchet connection of said armed wheel with the arm 49,) and when the said arm of the armed wheel that was formerly located in the path of the antifriction-roller of the bar 38 is moved back almost forty-five degrees the spring action of said antifriction-roller 56 will force it laterally until it stands in longitudinal alignment with the machine. This has the effect of bringing another arm of the armed wheel in position to be engaged by the antifriction-roller 55 at the next forward movement of the bar 38, it being noted, Fig. 9, that the ratchet-wheel 51 of said armed wheel is provided with four teeth. In Fig. 10 is shown in detail the construction of said movable antifriction-roller 56, which comprises a frame 57, in which said roller 56 is mounted, said frame 57 being located within the recess 58 in the projection 54 and provided with a stem 59, that passes through an opening in the rear end of said recess 58. A spring 60 is located within the recess and presses against the rear end of

said frame 57 and forces the same laterally. The pin 61 passing through said stem 59 prevents the frame from passing out of said recess. To the downwardly-projecting arm 44 of said rock-shaft 42, heretofore referred to, is connected the slotted end of the link 62, and said link 62 passes rearwardly and is pivotally connected with the upper end of a lever 63, that is pivoted upon the frame of the machine. The rear end of said lever 63 passes through a slot 64 in the forward wall of the tube 13 and is pivoted to a follower 65. It will be seen by the foregoing description that as the rock-shaft turns in its bearings the said follower 65 will be raised or lowered intermittently by reason of the slotted connection between said arm 44 and the link 62. This intermittent motion of the follower 65 serves to prevent the corn or seed from clogging or stopping within the tube 13 in an obvious manner.

It will be plainly obvious from the foregoing description that when the corn-planter is traveling across the field the parts can be thrown into position to plant the corn continuously and when the machine arrives near the end of the row it is necessary to mark the points at which the corn has been dropped, so that after the machine is turned around the first hills of the next row can be planted in alignment therewith in the usual manner; and to accomplish this purpose I have arranged two hoes 66, that are adapted to mark the ground at the point where the corn is dropped. Of course during the planting of the row it is unnecessary to have these hoes operated, and the mechanism operating them is only thrown into gear at the end of the row. The said hoes are connected by arm 67 with the rock-shaft 68 and supported in bearings on the beams of the machine and provided at one side, preferably the left-hand side, with an upwardly-projecting arm 69. Said arm 69 is pivotally connected with a sliding rod 70, Fig. 12, which passes through bearings in the cross-supports 2 and 3, and is provided at its rear end with an upwardly-projecting lug 71. This lug 71 is pivoted to a sliding rod 72, which latter is pivoted to another sliding rod 73, and the said sliding rod 73 is pivoted at its rear end to an arm 74 upon the rock-shaft 75 by a foot-lever 76, that is located in position to be operated by the driver of the machine. A spring 77 is connected at its forward end with the cross-support 3 and at its rear end with the lug 71 of the sliding bar 70 and serves to hold said sliding bar 70 at the forward limit of its movement, so as to hold the hoes out of the ground, and it will be noted that by oscillating the foot-lever 76 through the intermediacy of the several sliding bars the hoes can be thrown down into the ground at any point. This construction affords a means whereby the driver can mark the points at which the corn has been dropped when the seed-dropping mechanism is in gear with the axle of the machine, as will be more

fully described hereinafter. The mechanism for operating said hoes when said machine is operated by the axle is constructed as follows: The shaft 32 extends beyond its bearings upon the beam A' and is provided with a toothed segment 78, while the sliding rod 72, that is located immediately under said segment 78, is provided with a toothed portion 79. When the parts are in the position shown in Figs. 2 and 12, the said segment 78 will not engage the toothed portion 79 of the rod 72; but I have provided means for lifting said rod 72, so that its toothed portion will be engaged at every revolution of said segment, so that the rod 72 will be moved backward to throw the hoes down into the earth. The device for raising said rod 72 consists of an upright 80, having its lower part passing through a vertical opening 81 in the beam A', Fig. 7, and provided with a projection 82, through which the rod 72 slides. An upright guide 83 passes through said projection 82 and serves to confine the vertical movement of the upright 80. The upper portion of said upright 80 is toothed, as shown at 84, and is located to be engaged by the pinion 85, carried by a revoluble shaft 86, that is supported in bearings 87 on the frame of the machine, and is provided with a handle 88, located in position to be operated by the driver. It will thus be seen that by turning the shaft 86 the upright 80 will be elevated, which will in turn elevate the sliding rod 72 to bring the toothed portion thereon in position to be engaged by the segment 78 upon said shaft 32. The said handle 88 is provided with a pawl 89, that engages the toothed portion 90 upon one of the bearings 87, by means of which the shaft 86 can be held in its adjusted position.

It will thus be seen from the foregoing description that when the machine arrives near the end of the row the driver can, by throwing the sliding rod 72 into gear with the revolving segment, operate said hoes 66 so that the latter will be thrown into the ground every time that the corn is dropped, it being intended that such parts are so constructed and arranged with relation to each other that the downward movement of said hoes will occur just as the corn drops. The segment only moves the rod 72 sufficient to throw the hoes down and then leaves the same, whereupon the spring 77 will lift said hoes until they are again acted upon by the said segment.

At or near the end of the row it may be sometimes necessary to throw the seed-dropping mechanism out of gear when it is desired to drop more corn before the machine is turned for another row, and in this case it is necessary to have mechanism that can be operated by the driver to drop the seed and also to mark the point at which it has been dropped. To accomplish this purpose, the end of the revoluble shaft 86 is provided with a beveled gear-pinion 91, and a bevel gear-pinion 92 upon the shaft 32 is located to

be engaged by said bevel gear-pinion 91. The shaft 86 is located in sliding bearings, and a spring 93 is arranged upon said shaft and serves to hold it at the rearward limit of its movement with the gear-pinions out of engagement with each other, and when the shaft is in this position the pinion 85 engages the toothed portion 84 with the upright 80. When it is desired to operate the corn-dropping mechanism by this shaft 86, the said shaft is pushed forward until the bevel gear-pinions 91 and 92 intermesh with each other, whereupon said shaft is turned so as to turn the shaft 32 and operate said corn-dropping mechanism in an obvious manner. At the same time, by means of the oscillating foot-lever 76, the hoes 66 can be operated to mark the point at which the seed drops.

To the rear end of the machine, Figs. 1, 2, and 3, is secured a marker C, said marker being mounted at the end of a rod 94, which rod is pivoted to a projection 95, that is itself journaled in a cross-piece 1 of the frame of the machine. The length of the rod 94 is sufficient to hold the marker out far enough to mark the next row in which the machine must travel, and the marker is held by means of a rope or strand 96, secured thereto at its rear end and connected at its forward end to the tongue D of the machine. In this way it will be seen that the marker can be turned from one side of the machine to the other in an easy manner. The tongue D is pivotally mounted upon a pivot-pin 97, that is supported in bearings projecting from the beams of the frame, and an adjustable plate 98 is secured to the cross-support 4 of the frame that presses against the upper end of the said tongue. Said plate is slotted and can be adjustably secured to said cross-support, whereby the elevation of the runner can be regulated. By means of the pivotal connection between the tongue D and the frame of the machine it will be noted that the said runners will easily ride over any projection or unevenness of the ground.

The rear end of the tongue D is provided with a toothed segment 99, that engages a toothed segment 100, secured to a rock-shaft 101, which rock-shaft is provided with an upwardly-projecting arm 102, that is connected by means of a rod 103 with the lever 30, said lever 30 being provided with a spring-pawl 104, that engages a toothed segment 105 upon the beam A of the machine. It will thus be seen that by reason of the toothed segments 99 and 100 the runners 9 can be raised off the ground and held in this position by the engagement of the spring-pawl 104 with the segment 105 of the beam A.

I claim as my invention—

1. The combination substantially as hereinbefore set forth in a corn planter, with the supporting wheels and their axle 7, the shaft 32 for operating the seed dropping mechanism, a gear connection between said shaft 32 and axle 7, a rock shaft 26 upon the frame of

the machine, two cam surfaces 25 upon said rock shaft, an arm 27 loosely mounted upon said rock shaft and located between said cam surfaces, a clutch for disconnecting the gear connection between the axle 7 and the shaft 32 movably secured to said axle 7 and engaged by the free end of said arm 27, and devices for turning said rock shaft.

2. The combination substantially as hereinbefore set forth in a corn planter, with the supporting wheels, a shaft 32 geared to said supporting wheels, a crank arm upon said shaft connected with a sliding bar 38, and a rock shaft 42 operating the seed dropping mechanism, having an intermittent connection with said sliding bar 38.

3. The combination substantially as hereinbefore set forth in a corn planter, of the supporting wheels, a shaft 32 geared thereto, a sliding bar 38 connected by a pitman 37 with a crank arm upon said shaft 32, and a rock shaft 42 for operating the seed dropping mechanism having an intermittent connection with said sliding bar 38.

4. The combination substantially as hereinbefore set forth in a corn planter, of the supporting wheels, a shaft 32 geared thereto, a reciprocating bar 38 connected with said shaft 32, a shaft 42 for operating the seed dropping mechanism, a shaft 48 having an arm connected with said rock shaft 42, an armed wheel 50 carried by the arm upon said shaft 48, a pawl and ratchet mechanism to limit the movement of said armed wheel 50, said armed wheel being located in the path of a projection carried by said reciprocating bar 38.

5. The combination substantially as hereinbefore set forth in a corn planter, of the supporting wheels, a shaft 32 geared thereto, a reciprocating bar 38 connected with said shaft 32, a projection upon said bar 38 located to engage the armed wheel 50 carried by an arm upon the shaft 48, and a connection between said shaft 48 and the rock shaft 42 of the seed dropping mechanism whereby the latter is turned by the reciprocation of said bar 38.

6. The combination substantially as hereinbefore set forth in a corn planter, of the supporting wheels, a shaft 32 geared thereto, a reciprocating bar 38 connected with said shaft 32, a shaft 48 connected with the rock shaft 42 of the seed dropping mechanism whereby said rock shaft 42 will be turned by the movement of said shaft 48, an armed wheel carried by an arm upon said shaft 48, a pawl and ratchet mechanism connected with said armed wheel to limit its movement, a projection upon said bar 38 located to engage said armed wheel, and a movable spring pressed projection 56 carried by said bar 38 and located to engage said armed wheel.

7. The combination substantially as hereinbefore set forth in a corn planter, of the supporting wheels, a shaft 32 geared thereto, a reciprocating bar 38 connected with said shaft 32, a shaft 48 connected with the rock

shaft 42 of the seed dropping mechanism whereby said rock shaft 42 will be turned by the movement of said shaft 48, an armed wheel carried by an arm upon said shaft 48, a pawl and ratchet mechanism connected with said armed wheel to limit its movement, a projection upon said bar 38 located to engage said armed wheel, and a movable spring pressed antifriction roller 56 carried by said bar 38 located to engage said armed wheel.

8. The combination substantially as hereinbefore set forth in a corn planter, with the rock shaft 68 carrying the hoes 66, a sliding rod 72 connected with an arm upon said rock shaft 68, a toothed portion 79 upon said rod 72, a shaft 32 connected with the said dropping mechanism and provided with a toothed segment 78 located to engage said toothed portion 79 of the sliding rod 72 for moving said sliding rod 72 in one direction, and a spring for moving it in the opposite direction.

9. The combination substantially as hereinbefore set forth in a corn planter, with the rock shaft 68 carrying hoes 66, the shaft 32 connected with the seed dropping mechanism of the machine and provided at one end with a toothed segment, a sliding rod 72 provided with a toothed portion 79 and movable toward and away from said toothed segment, an arm upon said rock shaft 68 pivotally connected with said rod 72, and a spring for moving said rock shaft in the opposite direction to which it is moved by said toothed segment of the shaft 32.

10. The combination substantially as hereinbefore set forth in a corn planter, of a rock shaft 68 carrying the hoes 66, an arm upon said rock shaft connected with an arm 74 upon a rock shaft 75, and a foot lever 76 mounted upon said rock shaft 75.

11. The combination substantially as hereinbefore set forth in a corn planter, of a rock shaft 68 carrying the hoes 66, a sliding rod 72 connected with an arm upon said rock shaft 68 and provided with a toothed portion 79, a movable upright 80 through which the said sliding rod 72 passes, a shaft 86 supported upon the frame of the machine and provided with a pinion engaging said toothed portion of the upright 80, devices for holding said shaft 86 in its adjusted position, a shaft 32 connected with the operating parts of the machine and provided with a toothed segment adapted to engage said toothed portion 79 of the rod 72, and a spring for moving said rod 72 in the opposite direction to that in which it is moved by said toothed segment.

12. The combination substantially as hereinbefore set forth in a corn planter, of a shaft 32 connected with the seed dropping mechanism, a toothed segment carried by said shaft 32, a sliding rod 72 connected with the rock shaft 68 carrying the hoes 66 of the machine, said sliding rod 72 being provided with a toothed portion 79, a movable upright 80 connected with said sliding rod 72 for lifting or depressing the same, a longitudinally mov-

able shaft 86 supported in bearings on the frame of the machine and provided with a pinion 85 engaging a toothed portion 84 of the upright 80, and a gear pinion 91 upon said shaft 86 adapted to intermesh with a gear pinion 92 upon the shaft 32, said pinions 85 and 91 being located with relation to each other, so that when the pinion 85 engages the toothed portion of the upright 80 said gear pinion 91 will be out of gear with the gear pinion 92 of said shaft 32.

13. The combination substantially as herebefore set forth in a corn planter, of a shaft 32 connected with the seed dropping mechanism, a toothed segment carried by said shaft 32, a sliding rod 72 connected with the rock shaft 68 carrying the hoes 66 of the machine, said sliding rod 72 being provided with a toothed portion 79, a movable upright 80 connected with said sliding rod 72 for lifting or depress-

ing the same, a longitudinally movable shaft 86 supported in bearings on the frame of the machine, and provided with a pinion 85 engaging a toothed portion 84 of the upright 80, a gear pinion 91 upon said shaft 86 adapted to intermesh with a gear pinion 92 upon the shaft 32, said pinions 85 and 91 being located with relation to each other so that when the pinion 85 engages the toothed portion of the upright 80 said gear pinion 91 will be out of gear with the gear pinion 92 of said shaft 32, and a spring for moving said shaft 86 to keep the pinion 85 normally in gear with the toothed portion 84 of the upright 80.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM F. F. BUCK.

Witnesses:

W. H. LEEMAN,

F. WENDELSCHAEFER.