

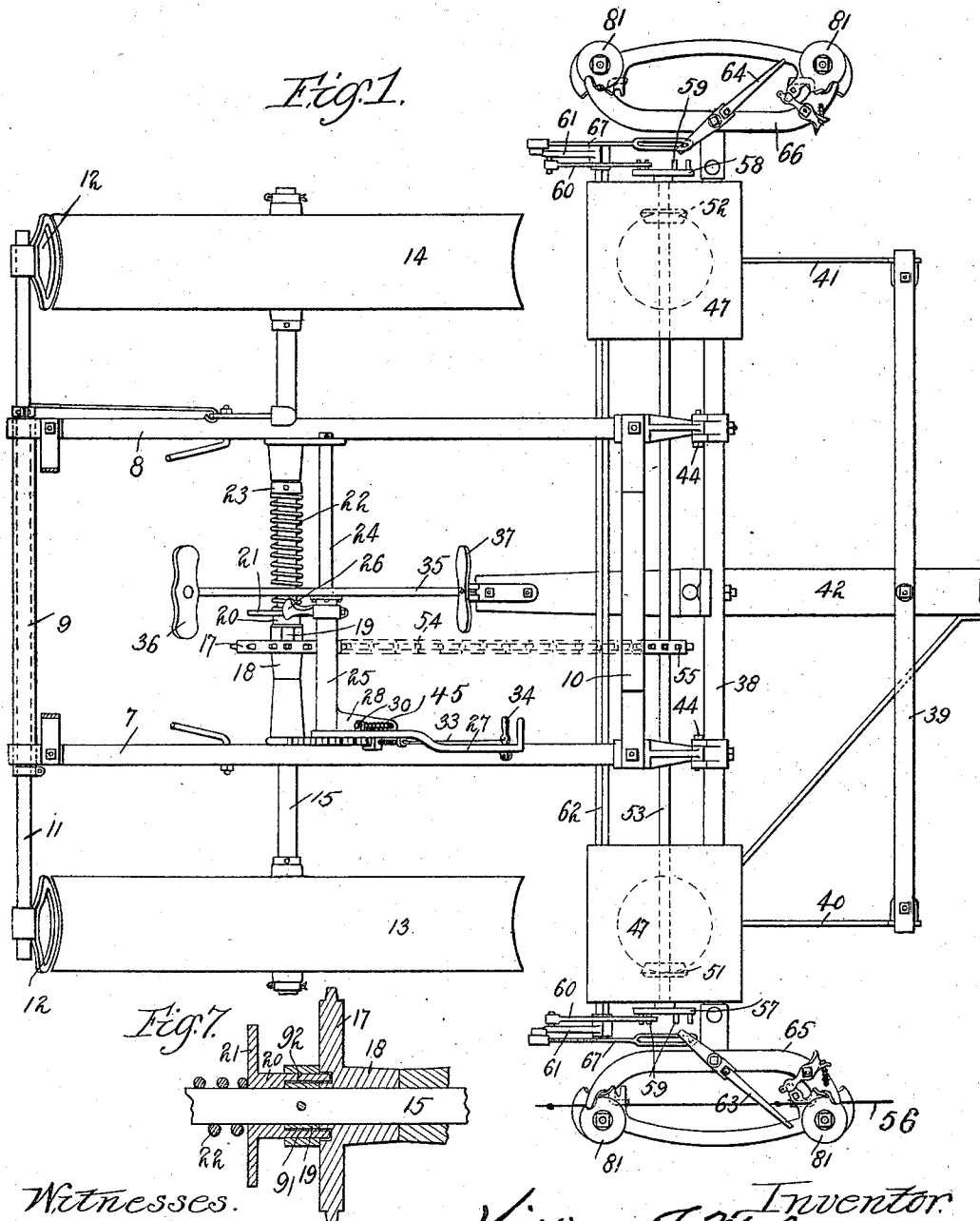
(No Model.)

4 Sheets—Sheet 1.

W. T. M. BRUNNEMER.
CORN PLANTER.

No. 579,106.

Patented Mar. 16, 1897.



Witnesses.

Wm. M. Rheem.
Julia M. Bristol.

Inventor.
William T. M. Brunner.
by Bond, Adams, Richard & Jackson
His Attys.

(No Model.)

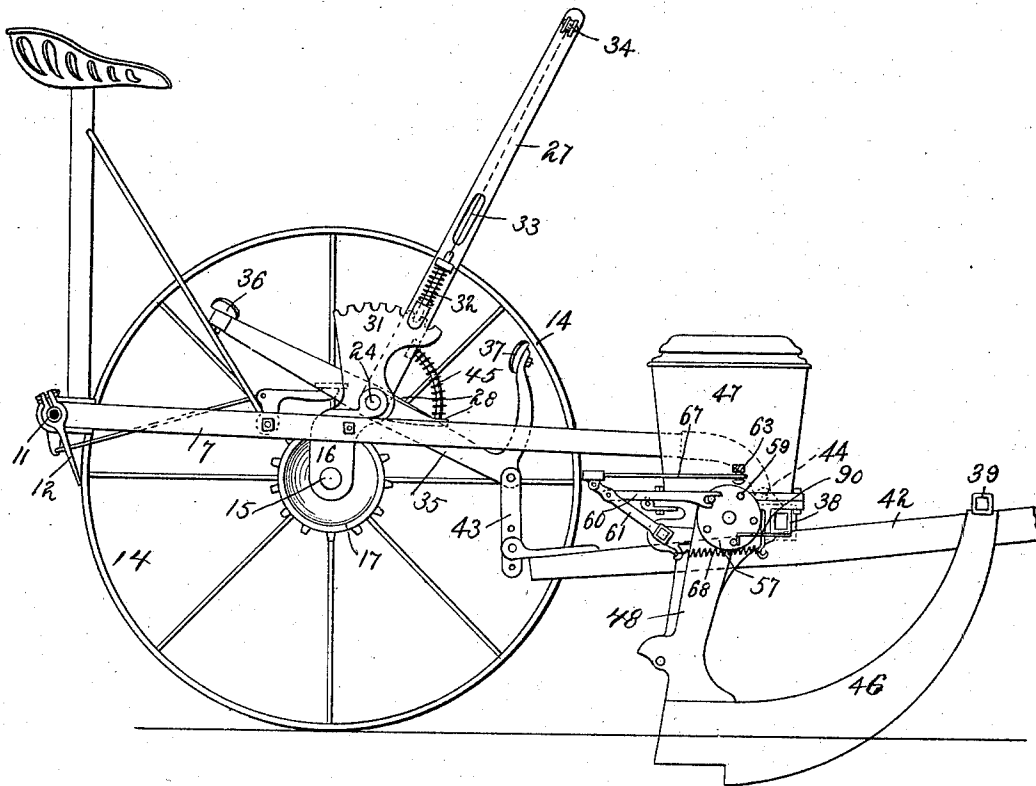
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Fig. 2.



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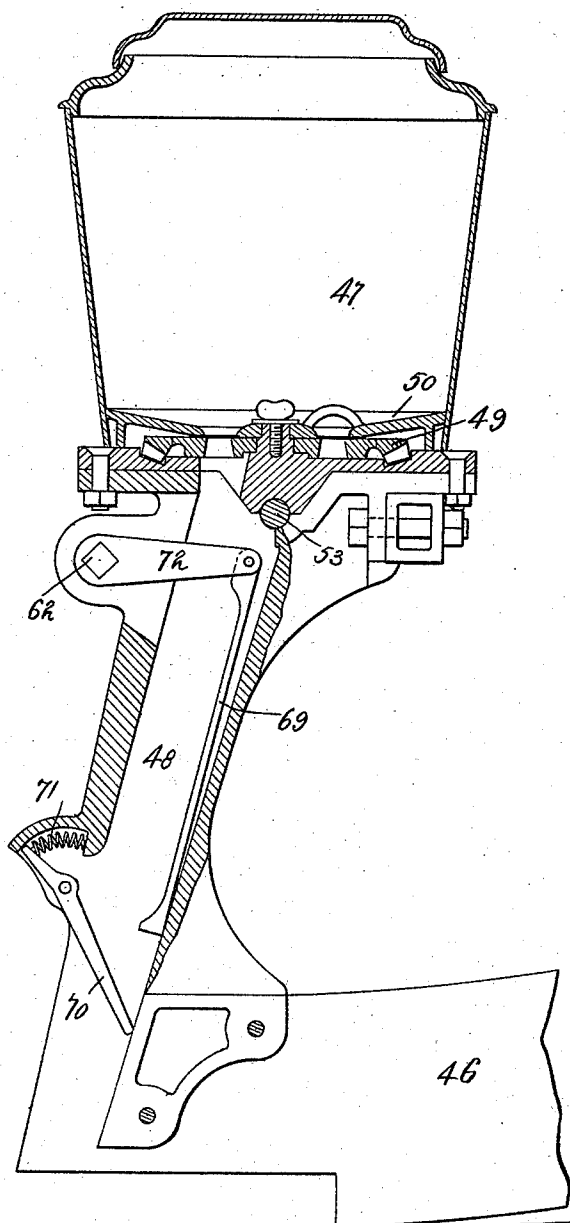
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Fig. 3.



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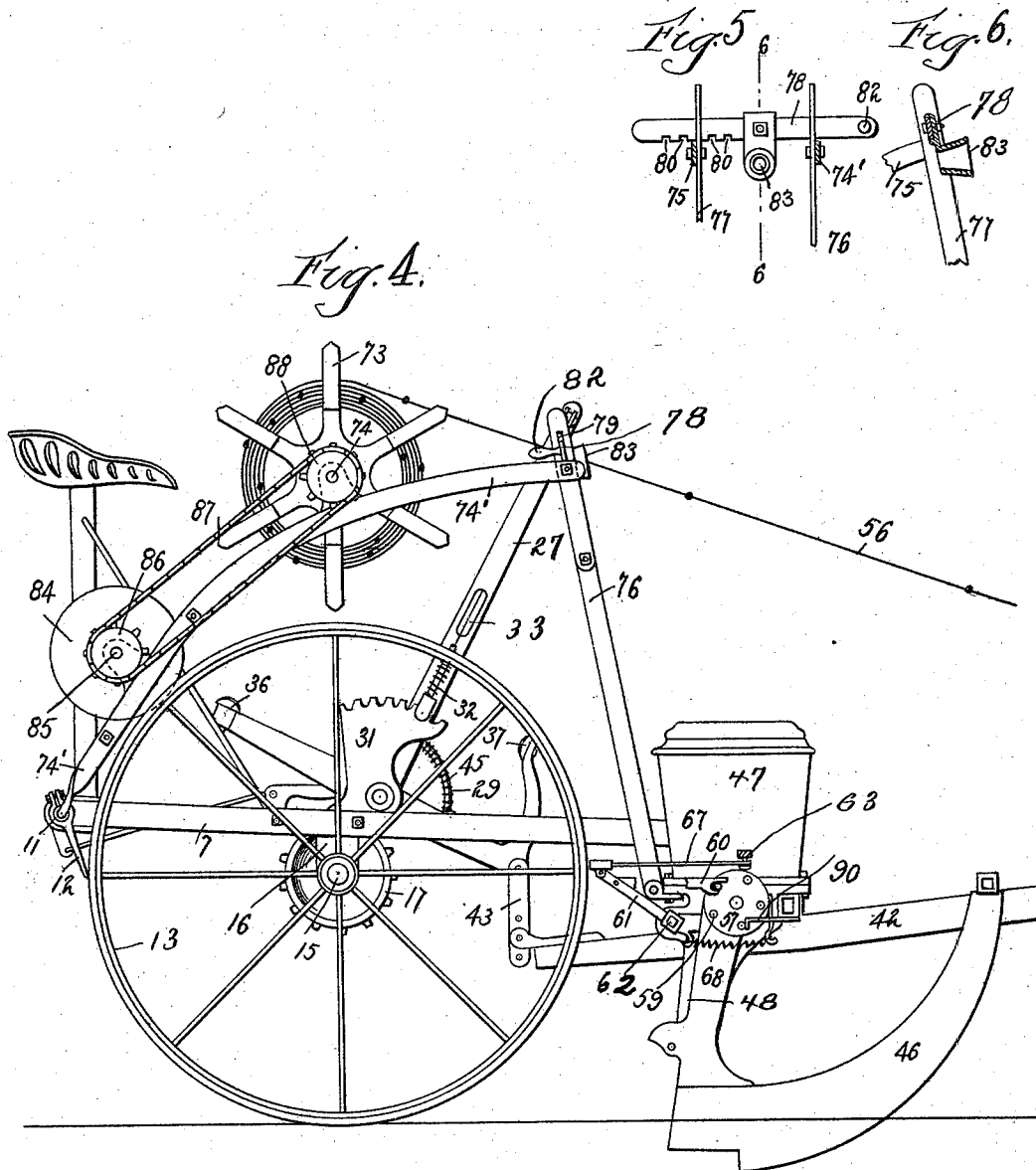
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UNITED STATES PATENT OFFICE.

WILLIAM T. M. BRUNNEMER, OF KANKAKEE, ILLINOIS, ASSIGNOR TO THE
DAVID BRADLEY MANUFACTURING COMPANY, OF CHICAGO, ILLINOIS.

CORN-PLANTER.

SPECIFICATION forming part of Letters Patent No. 579,106, dated March 16, 1897.

Application filed August 9, 1895. Serial No. 558,717. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM T. M. BRUNNEMER, a citizen of the United States, residing at Kankakee, in the county of Kankakee and State of Illinois, have invented certain new and useful Improvements in Corn-Planters, of which the following is a specification, reference being had to the accompanying drawings, in which—

Figure 1 is a plan view of certain parts of a corn-planter. Fig. 2 is a side elevation of the same. Fig. 3 is an enlarged detail, being a longitudinal vertical section of one of the seedboxes with its seed-tube and runner. Fig. 4 is a side elevation of the entire machine. Fig. 5 is a detail, being an end view of the guide for the check-row wire. Fig. 6 is a vertical section on line 6 6 of Fig. 5. Fig. 7 is a detail of the clutch mechanism.

My invention relates to corn-planters, and particularly to such corn-planters as are capable of use for planting corn both by drilling and by check-rowing. Certain features of my invention are, however, designed for use in machines not adapted to plant by both methods, as will appear from the following description.

One of the most important features of my present invention consists in improved mechanism for insuring the dropping of the corn from the seed-tube.

Another important part of my invention consists in providing means for reeling the check-row wire.

Other features consist in mechanism for lifting the runner-frame, for throwing the drilling mechanism into and out of operation, for operating the reeling mechanism, &c., all of which will be fully hereinafter described.

What I regard as new will be pointed out in the claims.

In the drawings, 7 8 indicate bars arranged longitudinally and connected to transverse bars 9 10, the whole forming what may be called the "wheel-frame" of the planter. As best shown in Fig. 1, the rear bar 9 is tubular and carries within it a scraper-shaft 11, to the ends of which are secured scrapers 12, adapted to engage the rims of the usual wheels 13 14. The wheels 13 14 are mounted upon a shaft 15, which is journaled in suitable

hangers 16, depending from the bars 7 8, as shown in Fig. 4.

17 indicates a sprocket-wheel which is mounted upon a sleeve 18, loosely fitted upon the shaft 15, as shown in Fig. 1. The sleeve 18 has at one side, preferably formed with it, a clutch-section adapted to be engaged by a clutch-section 20, mounted upon the shaft 15.

19 indicates a collar which is rigidly secured to the shaft 15, preferably by a rivet, between the sprocket-wheel 17 and the clutch-section 20. The collar 19 is provided with passages 91, through which arms 92 of the clutch-section 20 pass to engage the sprocket-wheel clutch-section, as shown in Fig. 7. The collar 19 serves to key the clutch-section 20 to the shaft 15 and to hold the sprocket-wheel in place.

22 indicates a spring which is mounted upon the shaft 15 and holds the clutch-section 20 normally in engagement with the collar 19.

23 indicates a collar which confines one end of the spring 22.

24 indicates a shaft which is arranged parallel to the shaft 15.

25 indicates a sleeve fitted upon the shaft 24, which sleeve carries a cam-lever 26, the cam portion of which is adapted to engage the flange 21 of the clutch-section 20 when the sleeve 25 is rotated, thereby moving said clutch-section back out of engagement with the clutch-section 19 and releasing the sprocket-wheel 17.

The sleeve 25 is adapted to be rocked by a hand-lever 27, which is journaled upon the shaft 24 and is connected to the sleeve 25 by means of an arm 28, which projects from said sleeve, and a curved rod 29, which is fixedly connected to said arm and is connected to said lever by passing through a lug 30, being retained by a nut or other suitable device, as illustrated in Figs. 1 and 4.

31 indicates a notched segment which is arranged at one side of the lever 27.

32 indicates a locking-dog carried by said lever. The dog 32 is connected by a rod 33 to a lever 34, pivoted to the upper end of the lever 27 at substantially a right angle thereto. The upper end of the lever 27 is also bent over at the same angle and in close proximity to the lever 34, as best shown in Fig. 1. By

this construction the lever 34 is rendered easier of operation.

35 indicates a foot-lever which is also connected to the sleeve 25 and projects both forward and back thereof, being provided at both ends with foot-rests 36 37.

38 39 indicate transverse bars which are connected by bars 40 41, forming the runner-frame of the planter.

42 indicates the tongue, which is fixedly connected to the runner-frame and projects to the rear thereof, where it is connected to the foot-lever 35 by a link 43, as shown in Figs. 2 and 4.

The wheel-frame is pivotally connected to the bar 38 of the runner-frame by pivots 44, as shown in Fig. 1, whereby the runner-frame may be vertically adjusted when necessary.

From the foregoing description it will be evident that when it is desired to elevate the runner-frame this may be accomplished by depressing the rear end of the foot-lever 35, the hand-lever 27 being first unlocked, or, if desired, the lifting may be effected by drawing back the hand-lever. Either operation will throw the clutch-sections 19 and 20 out of engagement and stop the drilling mechanism, as will be hereinafter set forth.

The runners may be depressed by reversely operating either the hand or foot levers. For yieldingly holding the runners in the ground a spring 45 is mounted upon the rod 29 between the lever 27 and the arm 28. The runners are thus enabled to adapt themselves to the inequalities of the ground, producing better results.

46 indicates the runners, which are arranged near the ends of the runner-frame.

47 indicates the seedboxes.

48 indicates the seed-tubes of the runners, which are arranged in the usual manner under the seedboxes.

49 indicates seed-disks arranged in each seedbox.

50 indicates covering-plates, also placed in the seedboxes over the seed-disks in the usual manner.

The seed-disks 49 are provided in the usual manner with beveled-gear peripheries, which mesh with pinions 51 52, mounted upon a shaft 53, which extends from one seedbox to the other. For drilling purposes the shaft 53 is continuously rotated by the forward movement of the machine through the instrumentality of the sprocket-wheel 17, which is connected to it by a chain 54, and sprocket-wheel 55, as shown in Fig. 1. For check-rowing the chain 54 is removed and the shaft 53 is driven intermittently by a check-row wire 56 through the instrumentality of the following mechanism: 57 58 indicate disks mounted upon the opposite ends of the shaft 53, as shown in Fig. 1. The disks 57 58 are provided with a number of laterally-projecting pins 59, arranged in a circle, which pins are adapted to be engaged by actuating-dogs 60, pivotally supported by arms 61, secured to a rock-shaft 62,

arranged parallel to the shaft 53, as shown in Fig. 1. The shaft 62 is rocked by means of levers 63 64, pivoted to brackets 65 66, placed at opposite ends of the runner-frame, said levers 63 64 being connected to the arms 61 by slotted links 67, as shown in Fig. 1. The levers 63 64 have the usual forks for the check-row wires and are actuated in the usual way. The wires are guided by the usual guide-rolls 81. Springs 68 (shown in Fig. 4) serve to return the shaft 62 to its normal position after each actuation and also the check-row levers 63 64.

90 indicates pawls which prevent reverse movement of the disks 57 58 and shaft 53.

For effecting a regular dropping of the seed when check-rowing the seed-tubes 48 are each provided with force-feed mechanism consisting of a plunger 69, which is reciprocated in the seed-tube, being moved downward upon each actuation of the dropping mechanism. To effect this action, the plungers 69 are connected to arms 72, carried by the shaft 62 and projecting into the upper portions of the seed-tubes, as shown in Fig. 3. The seed-tubes are each provided near their lower ends with spring-valves 70, which retain the seed in the tubes until such valves are engaged and pressed back by the plungers 69 on their downward stroke, the seed being thereby forcibly discharged. Springs 71, fitted in recesses in the seed-tubes, serve to hold the valves 70 in operative position.

When the planter is used as a drill, the valves 70 are locked back out of operative position.

Heretofore the winding or reeling up of the check-row wire after use has been attended with many inconveniences, and to overcome most of them I have provided improved mechanism for reeling up the wire operated by the movement of the planter.

73 indicates the wire-reel, which is mounted upon a shaft 74, journaled upon supporting-bars 74' 75, the rear ends of which are pivoted to the rear bar 11 of the wheel-frame, their forward ends being connected to bars 76 77, Fig. 5, arranged more or less vertically and connected at their lower ends to the rear portion of the adjacent seedbox 47, as shown in Fig. 4.

78 indicates a cross-bar which is supported by the bars 76 77 in slots 79, as shown in Fig. 4. The bar 78 is provided with a number of notches 80, Fig. 5, adapted to engage the lower margin of the slot in the bar 76 to lock the bar 78 in position. The bar 78 may be released for the purpose of lateral adjustment by lifting it, and a handle 82 is provided for that purpose.

The bar 78 carries a guide 83 for the check-row wire, as shown in Figs. 5 and 6, and by adjusting said bar laterally the wire may be evenly wound upon the reel 73.

The reel 73 is caused to rotate to wind up the wire by means of a friction-roll 84, journaled upon the bars 74' 75, as shown in Fig.

4, said roll being adapted to frictionally engage the rim of one of the wheels, as 13. The axle 85 of the roll 84 carries a sprocket-wheel 86, which is connected by a link belt 87 to a sprocket-wheel 88, carried on the reel-shaft 74, so that the reel 73 may be rotated by the movement of the planter. The roll 84 is automatically thrown out of operative position when the runner-frame is raised by the bars 76 77, which lift the forward ends of the bars 74' 75 sufficiently to move the roll 84 out of contact with the wheel-rim. The reel may therefore be thrown into or out of operation by operating the lever 27.

15 I do not limit myself to specific details of construction, as many modifications may be made without departing from the spirit of my invention.

20 That which I claim as my invention, and desire to secure by Letters Patent, is—

1. In a planter, the combination with a seed-receptacle, and a seed-tube, of a valve 70 in said tube adapted to retain the seed therein, said valve being fulcrumed intermediate its ends in the rear side of the tube, a spring 71 bearing against the forward side of said valve above its fulcrum to hold said valve normally in a forwardly-tilted closed position, a plunger 69 operated in the forward side of the seed-tube to open the valve and release the seed, and mechanism for operating said plunger, substantially as described.

2. In a planter, the combination with wheel and runner frames, of a transverse shaft carried by said wheel-frame, a sleeve 25 mounted upon said shaft, a foot-lever 35 connected to said sleeve, said foot-lever being also connected to said runner-frame, an arm projecting from said sleeve, a hand-lever pivoted to the wheel-frame, and a rod 29 connecting said hand-lever to said arm 28, and a spring 45 on said rod, to exert a yielding pressure downward on the runner-frame, the said hand-lever being adjustable to limit the depth to which the runners may enter the ground, substantially as described.

3. In a planter, the combination with wheel

and runner frames, of a transverse shaft carried by said wheel-frame, a sleeve 25 mounted upon said shaft, a foot-lever 35 connected to said sleeve, said foot-lever being also connected to said runner-frame, an arm projecting from said sleeve, a hand-lever pivoted to the wheel-frame, a rod 29 connecting said hand-lever to said arm 28, and a spring 45 on said rod 29, whereby the runner-frame is held downward with a yielding pressure, the depth to which the runners may enter the ground being limited by adjustment of the hand-lever, and the said foot-lever being adapted to lift the runners against the action of said spring, substantially as described.

4. In a planter, the combination with wheel and runner frames, of a transverse shaft carried by said wheel-frame, a sleeve 25 mounted upon said shaft, a foot-lever 35 connected to said sleeve, said foot-lever being also connected to said runner-frame, an arm projecting from said sleeve, a hand-lever pivoted to the wheel-frame, a rod 29 connecting said hand-lever to said arm 28, a spring 45 on said rod 29, and a locking-dog for said hand-lever, whereby the runner-frame is held downward with a yielding pressure and made adjustable to limit the depth of runners in the ground, substantially as described.

5. In a corn-planter, the combination with wheel and runner frames, of a reel supported thereby, means for driving said reel by the movement of the planter, bars 76 77, cross-bar 78 having notches 80, and a guide supported by said cross-bar, substantially as described.

6. In a planter, the combination with wheel and runner frames, of bars 74' 75, bars 76 77 connected to said bars 74' 75 and the said runner-frame, a reel supported by said bars 74' 75, and means for driving said reel by the movement of the planter, substantially as described.

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Witnesses:

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