(No Model.) 3 Sheets—Sheet 1.

N. V. MOORE.

CORN PLANTER.

No. 442,988. Patented Dec. 16, 1890.

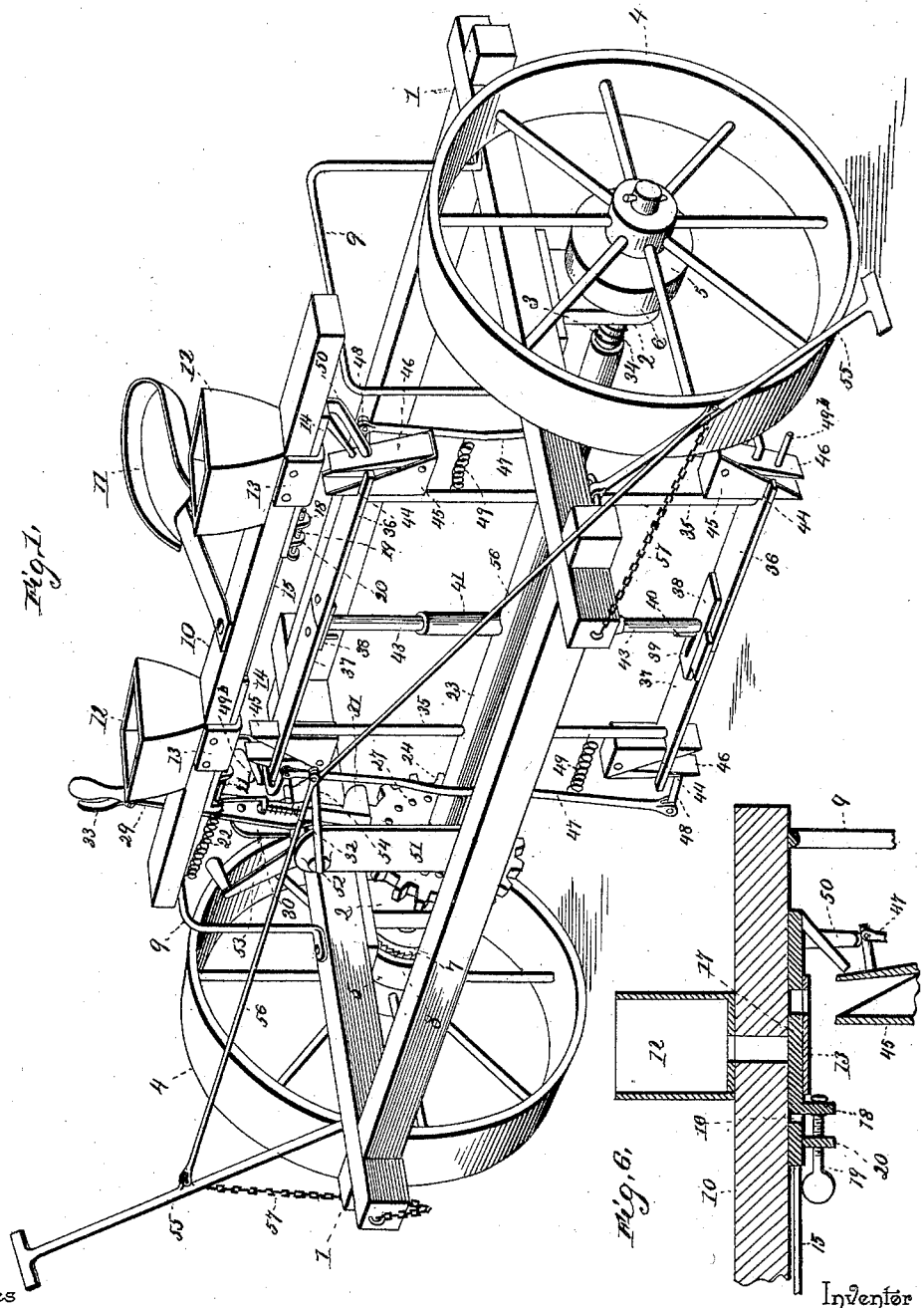


Fig. 1.

Fig. 6.

Witnesses
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Inventor
Nathaniel V. Moore.

By his Attorneys,
Wm. Bagger & Co.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.)

3 Sheets—Sheet 2.

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Fig. 2.

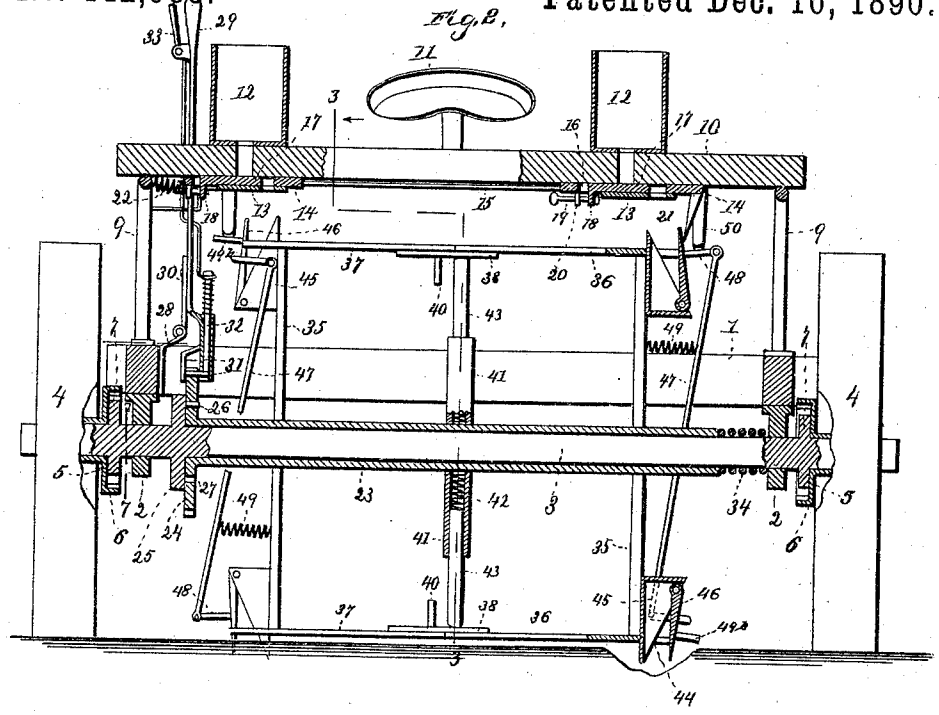
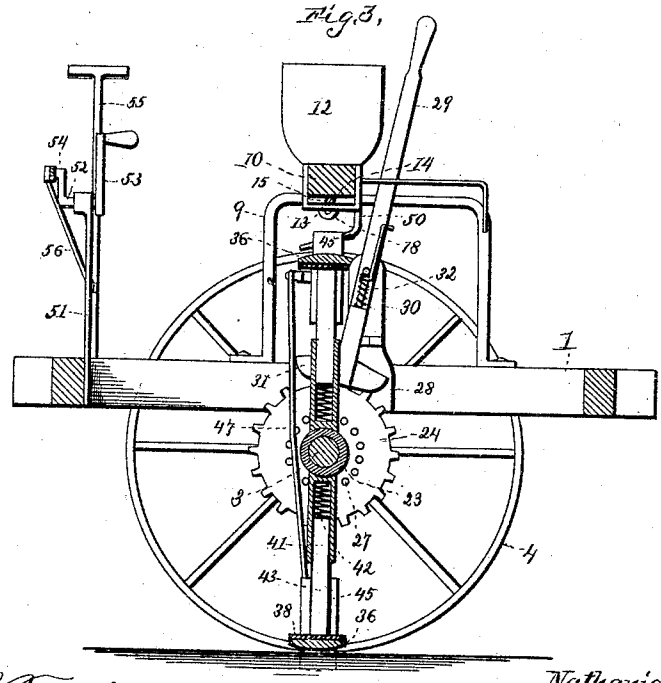


Fig. 3.



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Fig. 4.

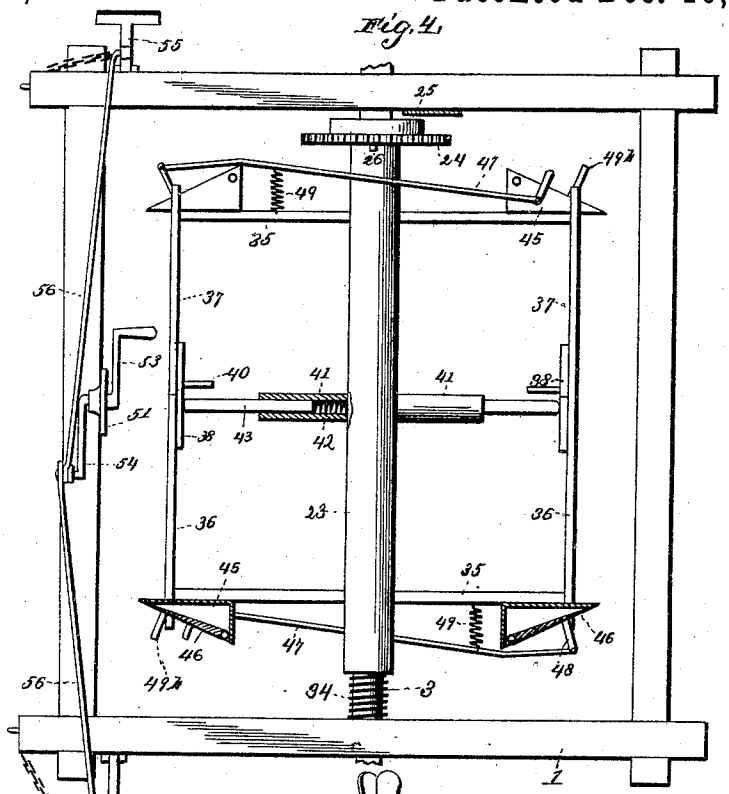


Fig. 5.

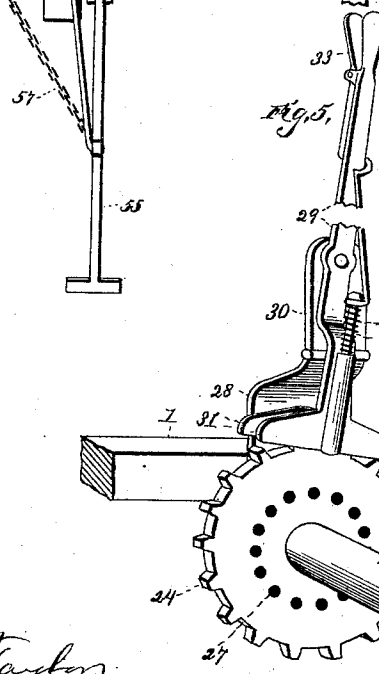


Fig. 8.

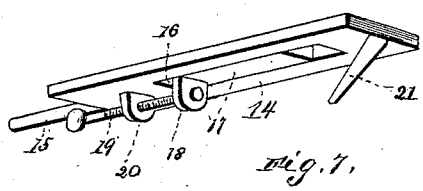
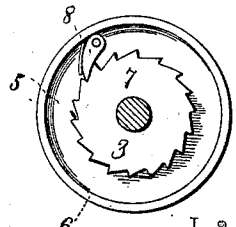


Fig. 7.



Witnesses

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UNITED STATES PATENT OFFICE.

NATHANIEL V. MOORE, OF FREDONIA, KANSAS.

CORN-PLANTER.

SPECIFICATION forming part of Letters Patent No. 442,988, dated December 16, 1890.

Application filed July 7, 1890. Serial No. 357,961. (No model.)

To all whom it may concern:

Be it known that I, NATHANIEL V. MOORE, a citizen of the United States, residing at Fredonia, in the county of Wilson and State of Kansas, have invented a new and useful Corn-Planter, of which the following is a specification.

This invention relates to corn-planters; and it has for its object to construct a machine of this class which shall be durable, simple, and inexpensive, and by means of which the corn may be planted in check-rows without the use of check-row wire such as is commonly employed.

My invention consists in the construction and arrangement of parts, which will be hereinafter fully described, with reference to the drawings hereto annexed, in which—

Figure 1 is a perspective view of a corn-planter embodying my improvements. Fig. 2 is a vertical transverse sectional view of the same, showing the machine in position for dropping and depositing corn. Fig. 3 is a longitudinal sectional view taken on the line 3 3 in Fig. 2. Fig. 4 is a horizontal sectional view showing the planting mechanism in an approximately horizontal position. Fig. 5 is a detail view, on a larger scale, of the regulating-lever and the parts operated thereby. Fig. 6 is a sectional view, on an enlarged scale, of one of the hoppers and dropping mechanism. Fig. 7 is a sectional view taken on the line 7 7 in Fig. 2. Fig. 8 is a detail view of one of the seed-slides.

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

1 designates a horizontal frame, which is provided with boxes or bearings 2, in which the axle 3 is journaled. The ends of said axle carry the supporting-wheels 4 4. The hubs of the latter are provided on their inner sides with disks 5, having circumferential flanges 6. Upon the axle 3 are mounted ratchet-wheels 7, engaged by pawls 8, which are pivoted to the inner sides of the disks 5, thus forming clutch mechanism, whereby when the machine moves in a forward direction the axle shall revolve with the wheels, while when the machine is backed the axle shall remain stationary. The side bars of the frame are provided with uprights or brackets 9, supporting a cross-bar 10, upon which the driver's seat 11 is mounted. The hoppers 12 12 are also located upon said cross-bar, which latter is provided with U-shaped plates or yokes 13, supporting the laterally-reciprocating seed-slides 14. The latter, of which there are two, are connected by means of a rod 15, and each of the said seed-slides is provided with a slot or opening 16, in which is mounted a slide 17, which is supported upon the yoke or plate 13 under the hopper. Each of the slides 17 is provided with a downwardly-extending lug 18, in which is swiveled the end of a set-screw 19, which extends through a threaded perforation in a lug 20, projecting downwardly from the seed-slide. It will be seen that by operating the set-screws 19 the slides 17 may be adjusted on the seed-slides, so as to regulate the size of the openings 16 in the latter, thereby enabling said openings, which form the seed-cups, to accommodate any quantity of seed.

One of the seed-slides is provided at one end with a downwardly-extending arm or bracket 21. To the said slide at the other end is attached one end of a traction-spring 22, the opposite end of which is attached to one of the uprights 9 of the frame, thus holding the seed-slides normally in position to be actuated by the mechanism which is to be hereinafter described. The arm 21 by abutting against one of the supporting-plates or yokes 13 serves to retain the seed-slides in proper position.

Suitably mounted upon the axle 3 between the boxes 2, in which said axle is journaled, is a tube 23, having at one end a spur-wheel 24. Upon the axle adjacent to the spur-wheel 24 is mounted a disk 25, having a laterally-extending pin 26, which may extend through any one of a series of perforations 27 in the spur-wheel 24, thus locking the tube 23 upon the axle when desired. The frame 1 is provided with a bracket 28, having a hinged arm 30, to which is pivoted a lever 29, the lower end of which is provided with jaws 31, engaging opposite sides of the spur-wheel 24. The lever 29 is also provided with a spring-actuated catch 32, working between the jaws 31

and engaging the spur-wheel 24. A handle 33 is provided, by means of which the catch 32 may be manipulated. A spring 34 is coiled upon the axle between the box 2 and that end of the tube 23 opposite to the one carrying the spur-wheel 24. It will be seen that by operating the lever 29 the jaws 31 at the lower end of said lever may be caused to engage the spur-wheel 24, so as to push the tube 23 against the tension of the spring 34, thereby disengaging the spur-wheel 24 from the pin 26 and enabling the axle to revolve within the tube 23, the latter being meanwhile held stationary by means of the catch 32, engaging the said spur-wheel. By swinging the lever upon its fulcrum the tube 23 may be partially rotated upon the axle for the purpose of adjusting the seeding mechanism, to be hereinafter described.

The tube 23 is provided near its ends with rods or arms 35, extending radially in opposite directions. At the outer ends of said rods are hinged the plates 36 and 37. The inner ends of plates 36 are provided with brackets 38, having slots 39 to receive pins 40, which extend inwardly from the plates 37, the ends of which are thus loosely jointed or connected with the meeting ends of the plates 36. The tube 23 is provided with radial outwardly-extending tubes 41, in which are seated springs 42, the outer ends of which are pressed by rods 43, extending from the hinged plates 36 or from the brackets 38 upon the latter. It will thus be seen that the jointed meeting ends of the plates 36 and 37 are forced automatically in an outward direction to an extent which is limited by the length of the slot 39, in which the pin 40 plays.

The outer ends of the plates 36 and 37 are provided with notches 44, in which are seated the seed-boxes 45, which are provided with hinged or pivoted covers 46, the outer ends of which normally bear against the inner sides of the boxes, which latter are triangular in shape, as shown, so that the edges of said boxes and covers shall readily enter into the soil. The seed-boxes are attached securely at the outer ends of the rods 35, attached to the tube 23, and the hinged covers of diametrically-opposite boxes are connected by rods 47, which are pivotally connected with arms or brackets 48, extending in opposite directions from the hinged covers of the boxes on the diametrically-opposite sides of the tube 23. It will thus be seen that when one of the said lids is thrown open the lid of the diametrically-opposite box will be thrown open simultaneously. Springs 49 connect the rods 47 with the rods 35 for the purpose of keeping the said lids normally in a closed position. The lids of two of the seed-boxes are provided with laterally-extending arms or brackets 49^b. The latter and the arms 48, extending from the lids of the remaining two seed-boxes, are in operation engaged by arms or brackets 50, extending downwardly from the top cross-piece 10 of the frame.

The front side of the frame of the machine is provided with an upright 51, in which is journaled a shaft 52, having at its rear end a crank 53, by means of which it may be readily manipulated by the driver. The front end of the shaft 52 is provided with a crank 54. To the sides of the machine are hinged the markers 55, which are connected by pivoted rods 56 with the outer end of the crank 54. Ropes or chains 57 connect the markers 55 with the frame, in order to prevent the said markers from being lowered too far. It will be seen that by manipulating the crank 53 the shaft may be turned so as to simultaneously raise the marker on one side of the machine and lower that on the opposite side. These markers are for the purpose of forming a mark on the side of the machine, which shall guide the driver in planting the next row.

From the foregoing description, taken in connection with the drawings hereto annexed, the operation and advantages of my invention will be readily understood. When the machine progresses over the field, the frame composed of the tube 23, with its attachments, will rotate with the axle. When the arms 48 and 49 engage the brackets 50, the doors or lids of the seed-boxes will be thrown open to receive the seed dropped from the hoppers, the seed-dropping mechanism being simultaneously actuated by one of the pivoted lids 46, engaging the arm 21, which extends downwardly from one end of the seed-slide. At the same time the seed-boxes at the lower end of the frame partially enter the ground, and the lids of said seed-boxes are thrown open by means of the connecting-rods which have been hereinbefore described, thus depositing the contents of said seed-boxes in the ground. The plates 36 and 37 form marking devices, and said plates, being yieldingly jointed, will readily adapt themselves to any inequalities in the surface of the land.

The operating mechanism of the planter may be very easily and quickly thrown into or out of gear, as may be desired, by means of the operating-lever 31, and by means of said lever the seeding-frame may also be readily adjusted when a new row is to be started at the end of the field. Owing to the absence of shoes or runners or similar furrow-opening devices—such as are common in other corn-planters—the draft of the machine will be found to be exceedingly light.

The general construction of my improved corn-planter is very simple and inexpensive, and a machine embodying my improvements may be manufactured at a moderate expense.

Having thus described my invention, I claim—

1. In a corn-planter, the combination of the frame, the axle, a tube mounted upon and adapted to revolve with the axle, the seed-

boxes mounted upon arms extending radially from said tube, and mechanism for supplying seed to and discharging it from said boxes, substantially as set forth.

2. In a corn-planter, the combination of the frame, the revolving axle, a tube mounted upon the said axle and having radially-extending arms carrying the seed-boxes, and means for connecting the said tube with and disconnecting it from the axle, substantially as set forth.

3. In a corn-planter, the combination of the frame, the revolving axle, a tube mounted loosely upon said axle and carrying the seeding mechanism, a disk mounted upon the axle and having a laterally-projecting stud, a disk mounted upon the end of the tube and having a series of perforations adapted to receive said stud, and a spring coiled upon the axle at the opposite end of the tube, substantially as and for the purpose set forth.

4. In a corn-planter, the combination of the frame, the revolving axle, the tube mounted upon said axle and carrying the seeding mechanism, the spur-wheel mounted upon one end of said tube, and a lever having a latch or catch adapted to engage said spur-wheel, substantially as and for the purpose set forth.

5. In a corn-planter, the combination, with the frame having the revolving axle, of the tube mounted upon said axle and carrying the seeding mechanism, the spur-wheel secured at one end of said tube, a spring coiled upon the axle at the opposite end of the tube, a disk mounted upon the axle adjacent to the spur-wheel and having a laterally-extending lug adapted to engage a series of perforations in said spur-wheel, a bracket secured to the frame, a plate hinged to the said bracket, a lever pivoted to said plate and having jaws engaging opposite sides of the spur-wheel, and a catch to engage the teeth of the latter, substantially as set forth.

6. In a corn-planter, the combination of the frame, the revolving axle, the tube mounted upon said axle and carrying seed-boxes, hoppers mounted upon the frame, and mechanism for dropping the contents of the hoppers into said seed-boxes, substantially as and for the purpose set forth.

7. In a corn-planter, the combination of the frame, the revolving axle, a tube mounted upon said axle and carrying the seed-box, mechanism for locking said tube upon and for disengaging it from the axle, the hoppers mounted upon the frame, and mechanism for dropping the contents of the hopper into the seed-box, substantially as set forth.

8. In a corn-planter, the combination of the frame, the revolving axle, the tube mounted upon said axle and having outwardly-extending arms, the seed-boxes secured at the outer ends of said arms and having hinged lids, the hoppers mounted upon the frame, the seed-slide mechanism for simultaneously opening the seed-boxes at diametrically-opposite sides of the tube when the upper seed-boxes pass under the hoppers, the seed-slide having at one end a downwardly-extending arm adapted to be engaged by the hinged lid of one of the seed-boxes, and connecting-rods between the lids of the seed-boxes on diametrically-opposite sides of the tube, substantially as and for the purpose set forth.

9. In a corn-planter, the combination of the frame, the revolving axle, the tube mounted upon the latter and having radially-extending arms, the seed-boxes at the outer ends of said arms, the hoppers mounted upon the frame, mechanism for dropping the contents of the hoppers into the seed-boxes, and the plates hinged at the outer ends of the outwardly-extending rods and having their meeting ends loosely jointed together, substantially as and for the purpose set forth.

10. The combination, with the frame having the revolving axle of the tube mounted upon said axle and having outwardly-extending arms, the plates hinged at the outer ends of said arms, the bracket secured at the outer end of one of said plates and having a slot to receive a pin extending from the meeting end of the adjacent plate, and springs to force the meeting ends of the plates in an outward direction, substantially as set forth.

11. The combination of the frame having the revolving axle, the tube mounted upon and adapted to revolve with the said axle and having outwardly-extending rods, the plates hinged at the outer ends of said rods and having their meeting ends loosely jointed together, the rods secured at the meeting ends of the plates at one side, the sockets extending from the revolving tube, and the springs seated in said socket, all arranged and operating substantially as set forth.

12. In a corn-planter, the combination, with the seed-boxes mounted at the outer ends of rods extending radially from a tube mounted upon and adapted to revolve with the axle, of the hoppers mounted upon the frame, the seed-slide having a downwardly-extending arm at one end, a traction-spring attached to the opposite end of the seed-slide, and the adjusting-slides mounted in slots or openings in the seed-slide and having swiveled screws extending through lugs depending from the seed-slide, substantially as set forth.

13. In a corn-planter, the combination of the hoppers mounted upon the frame, the yokes or stirrups attached to the cross-bar upon which they are mounted, the seed-slide mounted in said stirrups, and the adjusting-slides mounted in openings in said seed-slide and resting upon and supported by the supporting-stirrups, substantially as set forth.

14. In a corn-planter, the revolving tube mounted upon the axle and having outwardly-extending arms, the seed-boxes at the outer ends of said arms having hinged doors provided with laterally-extending arms, the rods connecting the said arms, and the springs to

keep the doors automatically shut, all in combination with the hoppers mounted upon the frame, mechanism for dropping the contents of the hoppers into the seed-boxes, and the brackets attached to the frame and adapted to engage the arms extending laterally from the doors of the seed-boxes, substantially as set forth.

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

NATHANIEL V. MOORE.

Witnesses:
H. M. KEESLING,
H. V. BUTCHER.