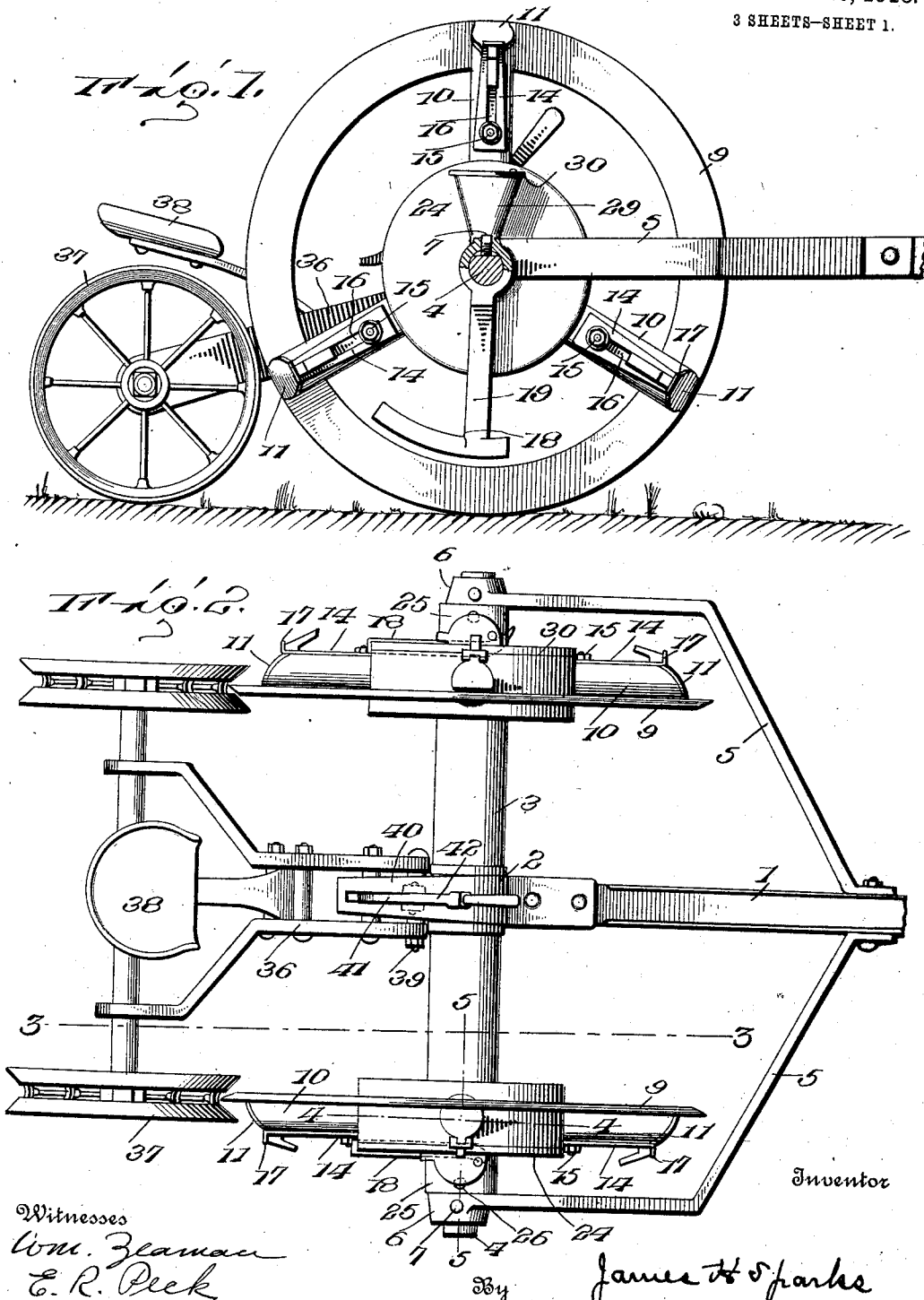


J. H. SPARKS.
CORN PLANTER.
APPLICATION FILED MAY 31, 1912.

1,053,235.

Patented Feb. 18, 1913.

3 SHEETS-SHEET 1.



Witnesses
Wm. Zelman
E. R. Peck

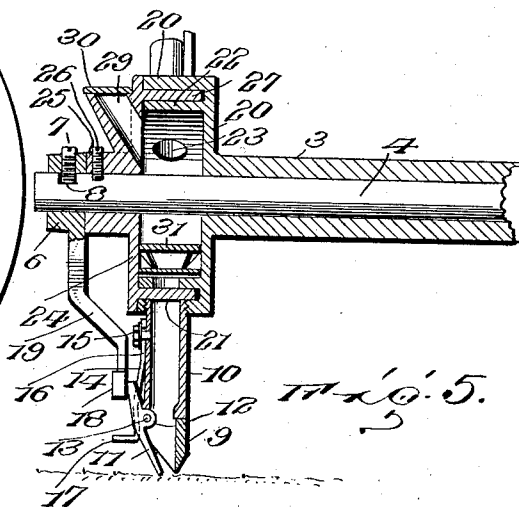
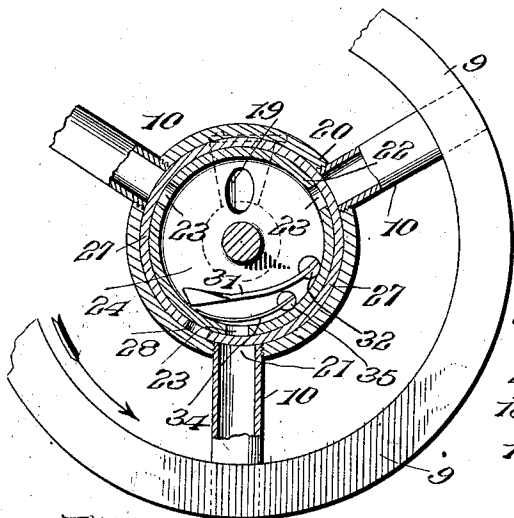
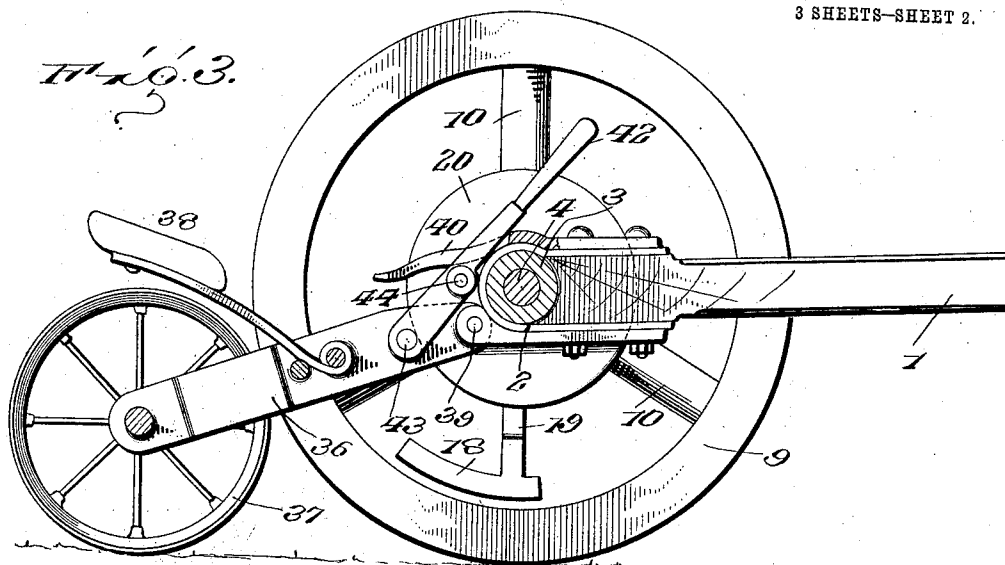
Inventor
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By
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Attorney

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3 SHEETS—SHEET 2.



Witnesses
Wm. Zeaman
E. R. Peck

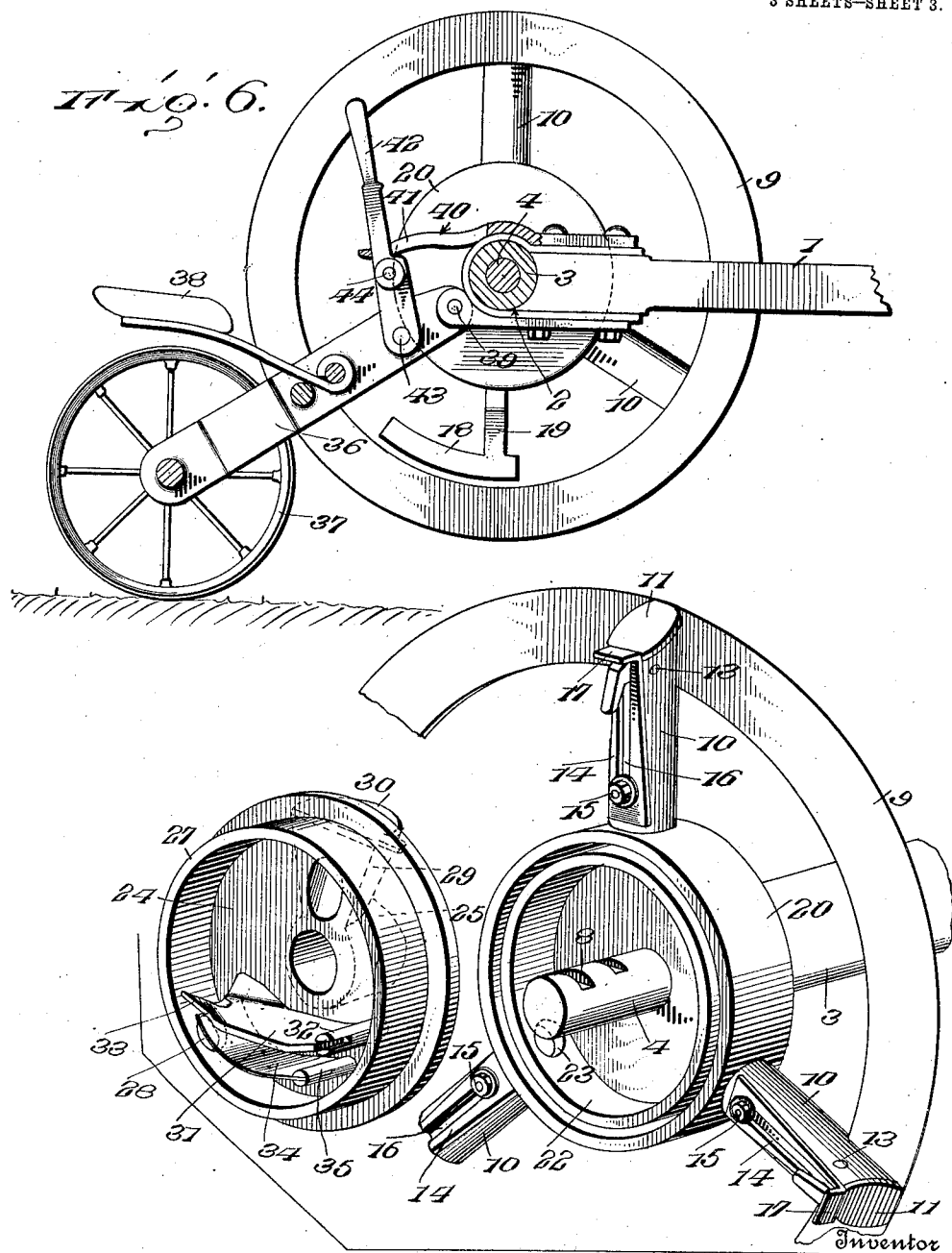
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3 SHEETS—SHEET 3.



Witnesses
Wm. Zemann
E. R. Pick

By

James H. Sparks
Ira C. Graham

Attorney

UNITED STATES PATENT OFFICE.

JAMES H. SPARKS, OF CLINTON, ILLINOIS.

CORN-PLANTER.

1,053,235.

Specification of Letters Patent.

Patented Feb. 18, 1913.

Application filed May 31, 1912. Serial No. 700,660.

To all whom it may concern:

Be it known that I, JAMES H. SPARKS, a citizen of the United States, residing at Clinton, in the county of Dewitt and State of Illinois, have invented certain new and useful Improvements in Corn-Planters, of which the following is a specification.

This invention relates to certain improvements in corn planters; and the objects and nature of the invention will be readily understood by those skilled in the art in the light of the following explanation of the accompanying drawings illustrating what I now believe to be the preferred embodiment from among other formations and arrangements within the spirit and scope of my invention.

An object of the invention is to provide improved means whereby hills of corn can be planted at regular and uniform intervals so that the hills will be properly spaced, all without the employment of check row wires.

The invention consists in certain novel features in construction and in combinations and arrangements of parts and elements as more fully and particularly set forth hereinafter.

Referring to the accompanying drawings:—Figure 1, is a side elevation of the planter. Fig. 2, is a top plan view thereof. Fig. 3, is a vertical longitudinal section on the line 3—3, Fig. 2. Fig. 4, is a section on the line 4—4, Fig. 2. Fig. 5, is a section on the line 5—5, Fig. 2. Figs. 6 and 7, are detail views.

The particular example illustrated in the drawings for purposes of explanation, comprises a draft tongue 1, at its rear end provided with a suitable housing embodying a transverse horizontal journal box 2, receiving the central portion of a transverse rotary sleeve 3, carried by said journal box and mounted to freely rotate therein.

A stationary axle 4, extends longitudinally through said sleeve and projects outwardly beyond the ends thereof. The sleeve rotates freely about this axle. Braces 5, are provided between the ends of the axle and the tongue. The front ends of these braces are bolted or otherwise rigidly secured to a forward portion of the tongue, and the braces diverge rearwardly and at their rear ends are formed with sleeves or collars 6, fitted on the projecting ends of the

axle and secured by set screws 7, entering notches 8, formed in the axle ends so as to firmly secure the axle and the collars together and against independent endwise movement. The ends of the rotary sleeve are provided with furrow opening devices adapted to rotate the sleeve by engagement with the ground as the planter moves forward. In the particular example illustrated, each furrow opener consists of a wheel rigid with the sleeve. Each wheel consists of a rim formed by a furrow-opening thin flat vertical metal ring 9, fixed to and carried by radial spokes rigid with a central hollow hub fixed on the sleeve end. The radial spokes are longitudinally hollow or tubular and form seed dropping tubes 10. These seed dropping tubes are uniformly spaced about the furrow opening ring with their outer ends arranged usually at the outer side face of said ring and with their open outer discharge ends beveled or inclined upwardly and outwardly. The discharge openings of the tubes are normally closed by flap or dropping valves 11. Each valve is arranged at the exterior of its tube end and closes against the end edges thereof and when in closed position inclines downwardly and inwardly toward the ring 9, so that the lower end of the tube is wedge shaped to facilitate its entrance into the ground or furrow. Each valve is rigid with and carried by an outwardly and upwardly projected stem 12, intermediate its ends fulcrumed on a transverse axis 13, to or in the outer side wall of the tube. The stem is projected radially and inwardly beyond said fulcrum so that the valve will be swung to open position by swinging the projected end of the stem toward the side face of the tube. Each valve is yieldingly held in closed position by any suitable means. For instance, I show a plate spring 14, arranged longitudinally on the dropping tube, and secured by set screw 15, passing through a longitudinal slot 16, in the spring to permit longitudinal adjustment thereof. The valve stem projects through this slot while the free end portion of the spring bears inwardly against the valve and yieldingly holds the same closed. The free outer end 17, of the spring is extended and bent laterally to form a marker, adapted to depress or otherwise visibly mark the surface of the soil over or

opposite the point at which the corn has been deposited from the tube when the valve is open.

- The dropping tubes of the two wheels are similar and are provided with similar devices such as just described, and the tubes of the two wheels are arranged opposite each other so that the planter drops two hills of corn at each operation, that is, each wheel drops a hill at the same time that the other wheel drops a hill. The rotation of the two wheels together is assured by the rotary sleeve with which the two wheels are rigid.
- The valves are operated to drop hills of corn by suitable mechanism. For instance, I show rigid trips or cams 18, arranged outwardly beyond the lower portions of the two wheels, and so located as to engage and swing the upper ends of the valve stems and open the valves as the dropping tubes assume the vertical positions. The cams are of sufficient length to hold the valves in opened position for an appreciable length of time to permit all of the kernels of corn to pass from these tubes into the furrows before the valve stems pass beyond the rear ends of the cams and snap to closed positions under the actions of their springs. These fixed cams 18, are in the particular example illustrated, carried by rigid arms 19, rigid with and depending from the braces 5, or collars 6, thereof.

- The hollow hub of each wheel constitutes a seed box. In the particular example illustrated, each wheel is rigid with a cylindrical hollow hub 20, and each hub is carried by and rotates with the sleeve 3, and in fact forms an outer end continuation or extension thereof about the axle. The seed dropping tubes radiate from and are fixed to the cylindrical or circumferential walls of these boxes 20. Each tube forms an outward continuation of and is alined with a seed discharge port or opening 21, extending radially through said wall 20. Each hollow hub or seed box is formed with an internal cylindrical wall or flange 22, concentric with and spaced inwardly a distance from said circumferential outer wall of the box. This flange 22, forms the rotating circumferential or surrounding inclosure or wall of the seed chamber within the box and is formed with radial seed discharge pockets 23, extending completely therethrough from the seed chamber to the space between flange 22, and the outer circumferential wall of the box. A seed pocket 23, is provided for each dropping tube 10, and is radially alined therewith. For instance, in the particular example illustrated, I show three droppers (dropping tubes 10) and hence I show three seed pockets 23, uniformly spaced around wall 22, and each pocket is alined with a discharge opening 21, and its dropping tube.

The outer open ends of these hollow rotary hubs are closed by fixed end heads, walls or plates to form the complete closed seed boxes. Each end head consists of a vertical wall or plate 24, having a central hub 25, fitted on the axle and secured thereto by a set screw 26, entering a notch in the axle, and a cylindrical flange 27, projecting from the inner side of the plate 24. Each stationary end head is fitted to the open end of a rotary hub to close the same, and its flange 27, fits concentrically within and fills the space between the outer circumferential wall and the internal flange of said hub, so that said wall and flange of the hub rotate at the outer and inner faces of said fixed flange 27. Each flange 27, is formed with a single radial seed discharge duct or port 28, adapted to successively register with the seed pockets 23, and their corresponding discharge outlets 21, as the hub revolves. The flange 27, closes communication between the pockets and the discharge openings 21, therefrom to the dropper tubes 10, and forms a closed floor or bottom for the pockets, except when a pocket registers with the port 28, whereupon the seed in such pocket drops therefrom through port 28, and into the communicating or corresponding dropper tube 10. The port 28 is arranged at the lower portion of the fixed flange 27, but in advance of the lowest portion thereof and in advance of the vertical plane including the longitudinal axis of the shaft 4, and approximately in which plane the valves of the droppers are opened to discharge the seed. The discharge ports 28, are thus located in advance of the vertical plane in which the droppers discharge the seeds, so that ample time will be afforded for the seeds to drop from the pockets and into the droppers and onto the valves thereof before the tubes reach the vertical discharge position when their valves are opened to drop the seeds into the ground. The pockets 23, are of the necessary capacity to deliver the desired number of seeds at each discharge and for each hill, and the ports 21, 28, are of the necessary, or corresponding, capacity to permit quick easy discharge of the seeds from the pockets and into the tubes 10, as the hubs revolve. The fixed end heads are provided with vertically disposed exterior funnels or hoppers 29, at their lower ends opening into the upper portions of the interiors of the seed boxes. The boxes can be filled or supplied with seeds through these filling hoppers. The open upper ends of the hoppers are normally closed by movable caps or covers 30.

Each seed box is internally provided with a normally stationary floor, stripper or cut-off plate 31 forming the seed supporting floor of the box. This plate is carried by a horizontal or transverse post 32, to which

the upper or rear end of the plate is secured and this post is secured to the fixed end head 24, of the box and projects inwardly therefrom across the interior of the box. This floor forming plate in width is approximately equal to the internal width of the box. The plate is arranged in the lower portion of the box and inclines downwardly and forwardly from the upwardly moving portion of the circumferential wall 22, of the box, to the downwardly moving forward free end 33, spaced a distance radially from said downwardly moving portion of wall 22, and slightly contracted in width and centrally depressed longitudinally to guide and gather the seeds toward the center thereof in filling pockets 23, as they move down past the free end of said plate and in stripping or gathering surplus seeds therefrom. The free end of this plate is arranged slightly above or in advance of the discharge port 28, so that each pocket with its load of seeds will pass down under said free end of said plate before it registers with port 28, and discharges its seeds there-through. This plate sustains the mass of seeds in the box and directs and guides the seeds downwardly and forwardly toward the downwardly moving pockets and delivers the seeds thereto to fill the pockets and strip surplus seeds therefrom. If so desired, the posts carrying said floor or stripper plates can be axially adjustable to raise or lower the free ends of said plates and thereby increase or decrease the number of seeds permitted to pass down with each pocket for discharge to the droppers.

Each seed box can be provided with a thin flexible plate spring 34, arranged below the floor or cut-off plate 31, and secured at its rear end to post 35, fixed to the stationary head 24, with slightly upturned or curved front free end bearing or springing outwardly against the inner surface of the rotary wall 22, at a point below the free end of said cut-off plate to sweep surplus seeds from the pockets. This spring can yield upwardly to permit seeds tending to wedge in and projecting from the pockets, to pass down under the spring and hence avoid danger of seeds so wedging and clogging as to prevent proper operation of the parts and proper delivery of seeds to the droppers.

In the particular example illustrated, I show a trailing truck 36, at its rear end provided with and supported by so-called corn planter or covering wheels 37, arranged directly behind the dropper wheels, respectively, to cover the hills, holes or furrows in which the seeds have been deposited. This truck is provided with and carries the driver's seat 38, and at its front end is pivotally coupled to the rear end of the tongue

1, by a transverse pivot or coupling bolt 39, arranged in aligned transverse eyes at the front end of the truck and rear end of the tongue.

A rigid bracket or arm 40, is fixed to and extends from and in rearward continuation of the rear end of the tongue and over and a distance above the front end of the truck, and this rigid rear extension is provided with a longitudinal slot 41. A vertically disposed hand lever 42, extends upwardly through this slot and at its lower end is fulcrumed on transverse axis 43, to the front portion of the truck at a point in rear of the coupling pin 39. This lever is provided with one or more lateral abutments below and adapted to engage the under surface of the extension 40, rigid with the tongue. In the present instance, these abutments are formed by rolls 44, mounted on studs fixed to and projecting laterally from the lever. The lever extends upwardly so as to be readily accessible to the driver occupying seat 38, and the arrangement is such that the lever can be swung fore and aft moving in the slot in said rigid rearward extension of the tongue. When the lever is swung to its limit of forward movement, see Fig. 3, the planter is in adjustment for planting and the furrow opening and dropping wheels rest on the ground and sustain sufficient weight to cause the annular rims and the dropping tubes to enter the ground the required distance for planting. When the parts are in this position, portions of the weights of the tongue, truck, and driver are sustained by said furrow opening wheels and the truck is free to swing vertically with respect to the tongue. When the machine is drawn forward by the tongue, the furrow opening wheels enter the ground a suitable distance and are thereby rotated by the advancing movement of the machine and hence cause deposit of seed at regular uniformly spaced intervals as hereinbefore pointed out. When for any reason it is desired to throw the furrow opening and seed dropping wheels out of action, out of operative engagement with the ground, the hand lever is swung rearwardly to the rear end of the slot in the rigid extension of the tongue, and the rolls 44, will bear against the under surface of said extension and elevate the same and the tongue so as to throw the weight of the planter onto the draft animals and the wheels of the truck, whereby the said furrow opening wheels will be upheld from operative contact with the ground and the planter can be transported on the truck wheels. The lever, when in rearward position, in connection with its rolls 44 and the downwardly deflected rigid rearward extension 40 of the tongue, locks the tongue and truck together to prevent independent upward movement of the tongue

and consequently the tongue, in effect, then becomes a rigid forward continuation of the truck frame, and is held elevated by the attachment thereof to the draft animals so as to hold the furrow opening and dropping wheels elevated from the ground. When in this adjustment, the truck frame and tongue as one rigid frame swing vertically on the axis of the covering wheels 37, as a center, and consequently are carried by the draft animals and by said covering wheels.

It is evident that various changes, modifications, and variations might be resorted to without departing from the spirit and scope of my invention and hence I do not wish to limit myself to the exact disclosure hereof.

What I claim is;—

1. A corn planter comprising a rotary member provided with seed dropping tubes having swinging seed dropping valves at their outer ends and springs yieldingly holding said valves closed and having extended portions forming markers.

2. A corn planter comprising a rotary element embodying a rotary hollow hub, seed tubes carried thereby and radiating therefrom and at their outer ends formed to enter the ground, a ground entering ring carried by the outer ends of said tubes, means to supply seeds to said tubes, and means to drop seeds from said tubes.

3. A corn planter comprising a draft frame, a transverse rotary sleeve carried thereby and provided with ground engaging seed dropping wheels embodying means for successively supplying measured quantities of seeds for dropping, dropping valves and trip devices carried by said frame for operating said dropping valves.

4. In combination, in a corn planter, a draft tongue, a transverse rotary sleeve mounted therein and having hollow hubs rotating therewith and forming seed boxes, seed dropping tubes radiating from said hubs and at their outer ends adapted to enter and discharge seeds in the ground, a stationary axle arranged in and at its ends projecting beyond said sleeve; fixed braces secured to the tongue and to the ends of said axle, stationary end heads for said seed boxes fixed on said axle, means for successively delivering seeds from said boxes to said tubes, dropping valves normally closing said tubes, and trips for operating said valves to discharge the seeds from said tubes, said trips being relatively fixed and carried by said braces.

5. A planter comprising a hollow seed box embodying a rotary member provided with radiating seed dropping tubes supplied with seeds from said box, said rotary member provided with seed pockets corresponding to said tubes, respectively, said box embodying means whereby said pockets are suc-

cessively placed in seed discharge communication with their tubes in advance of the arrival of said tubes at seed dropping position.

6. A planter comprising a seed box composed of a rotary hollow hub having radiating seed dropping tubes opening thereinto and seed pockets corresponding to said tubes respectively, and adapted to drop seeds thereinto, and a stationary head having a portion closing communication between said pockets and tubes and providing a discharge for successively opening said pockets one at a time to discharge into their respective tubes.

7. A planter comprising a seed box composed of a rotary hollow hub having radiating seed dropping tubes opening thereinto and formed with an internal concentric flange formed with radiating seed pockets opening therethrough and corresponding to and adapted to drop seeds into said tubes respectively, and a stationary head having a concentric flange normally closing the discharge ends of said pockets and having a radial discharge port with which said pockets are adapted to successively register.

8. A planter comprising a seed box embodying a rotary member provided with and carrying seed dropping tubes adapted to be supplied with seeds from said box, said rotary member having seed pockets corresponding to said tubes respectively, means for opening said pockets one at a time for discharging seeds to their respective tubes, and a cut-off member 31 forming the seed sustaining floor of said box.

9. A planter comprising a seed box having a rotary member provided with radial seed discharge outlets and corresponding radial seed pockets adapted to discharge to said outlets, means opening said pockets successively one at a time to discharge to their respective outlets, a flexible plate spring 34 under which said pockets successively pass, and a plate 31 forming the seed sustaining floor of said box and having a discharge end under which said pockets successively pass.

10. A planter comprising a tongue, rotating seed dropping devices carried thereby and operated by engagement with the ground, a trailing truck having covering wheels and at its front end pivotally joined to the rear of said tongue by a transverse axis, said tongue having a rearward rigid extension over said truck, and a vertically arranged lever swingable in the direction of draft and having a lateral abutment to engage the under surface of said extension to lift the rear end of said tongue.

11. In a corn planter, in combination, a tongue at its rear portion having a transverse journal box, a rotary sleeve at its central portion mounted in said box and

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at its outer ends having hollow hubs forming seed boxes, a non-rotary shaft extending through said sleeve and said hubs, supporting devices fixed to the ends of said shaft and to said tongue, a trailing seat carrying truck pivotally joined to said tongue, said tongue having a longitudinally arranged cam surface rigid therewith, a vertically swinging hand lever carried by the truck and having an abutment to engage said cam surface for holding the rear end of the tongue rigid with the truck against downward movement, and to permit free downward movement of the rear end of the tongue, seed dropping tubes radiating from said hollow hubs and provided with means for rotating the sleeve and tube by engagement with the ground, means for distributing seeds from said hollow hubs into said tubes, and valves for opening said tubes to deposit the seeds.

12. In combination, in a corn planter, a draft tongue, a transverse rotary sleeve mounted therein, and having hollow hubs rotating therewith and forming seed boxes, seed dropping tubes radiating from said hubs and at their outer ends adapted to enter and discharge seeds in the ground, a stationary axle arranged in and at its ends projecting beyond said sleeve, means for supporting said axle, stationary end heads for said seed boxes fixed on said axle, means for successively delivering seeds from said boxes to said tubes, dropping valves normally closing said tubes, and trips for operating said valves to discharge the seeds from said tubes.

13. In a corn planter, in combination, a tongue, a non-rotary axle, braces secured to the tongue and to the axle ends, ground engaging rotary seed dropping devices, comprising rotary seed boxes concentrically arranged on said axle and seed dropping tubes having swinging spring held dropping

valves provided with opening projections, and tripping devices carried by said braces and arranged to engage said projections.

14. In combination, in a corn planter, a tongue at its rear portion having a transverse journal box and a longitudinally arranged rigid slotted member, a rotary sleeve at its central portion mounted to rotate in said box and at its ends provided with hollow seed box forming hubs provided with radiating ground engaging seed dropping tubes and ground engaging annular furrow openers secured to said tubes, means for closing said hubs, means for delivering seeds to said tubes, said tubes provided with dropping valves, a trailing truck pivotally joined to said tongue and provided with covering wheels in rear of said tubes, and a hand lever carried by said truck and extending through said rigid slotted member and provided with means to engage the same for supporting the rear end of the tongue with said tubes and furrow openers elevated from the ground.

15. In combination, in a corn planter, a supporting frame, a rotary sleeve provided with hollow hubs, means for closing the hubs and to cooperate therewith in forming hollow rotary seed boxes, seed dropping tubes rigid with and radiating from said rotary hollow hubs and at their outer ends provided with seed dropping valves, means carried by said frame for opening said valves, furrow opening rings rigidly secured to the outer ends of said tubes, and means within said seed boxes for delivering seeds into the tubes.

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

JAMES H. SPARKS.

Witnesses:

A. E. STONE,
EDWARD ARTHUR.