

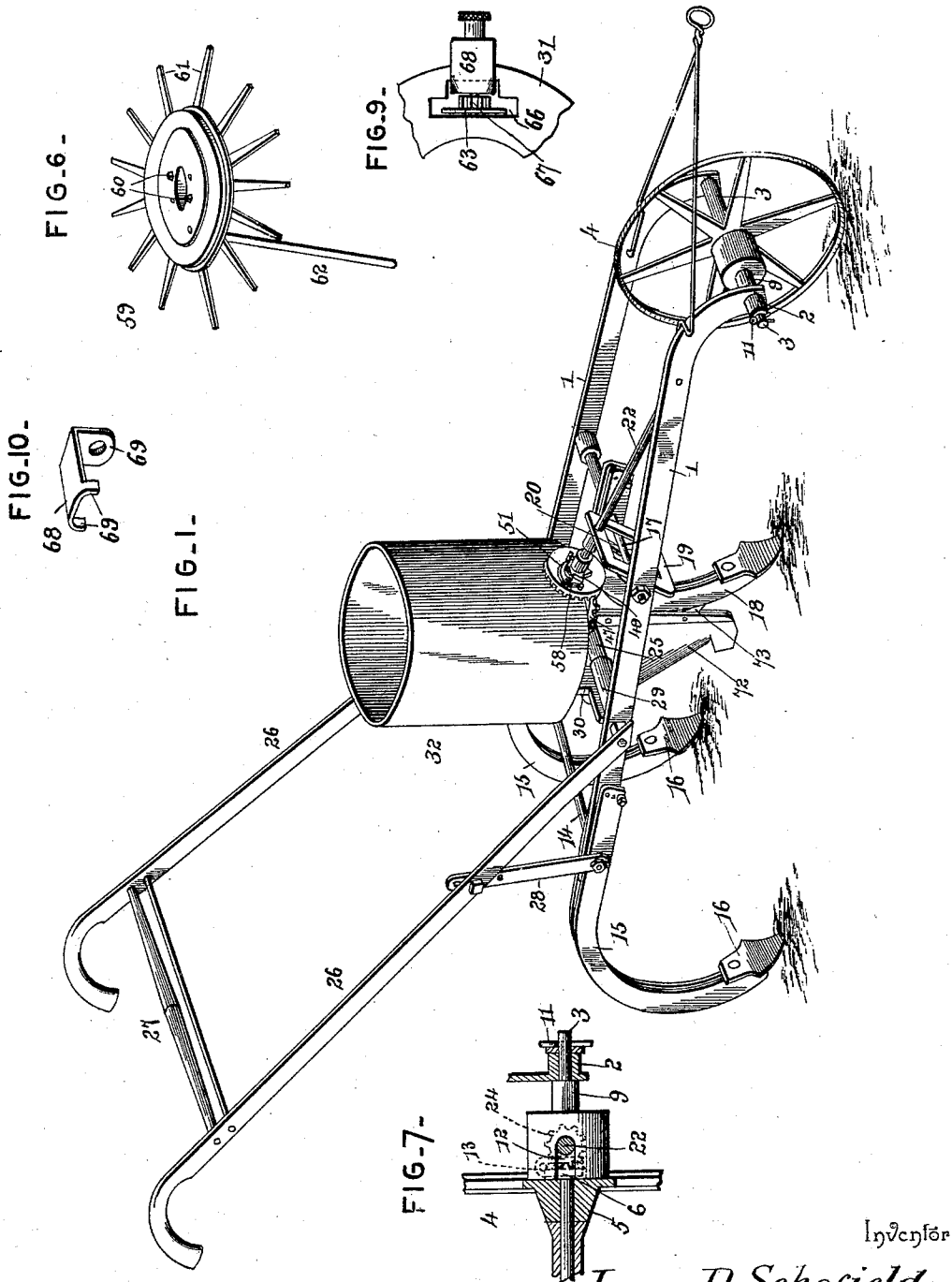
(No Model.)

2 Sheets—Sheet 1.

J. D. SCHOFIELD.
CORN OR COTTON PLANTER.

No. 509,950.

Patented Dec. 5, 1893.



Inventor

James D. Schofield

Witnesses:

Jas. H. McLathran

M. S. Duwall

By his Attorneys.

C. A. Snow & Co.

(No Model.)

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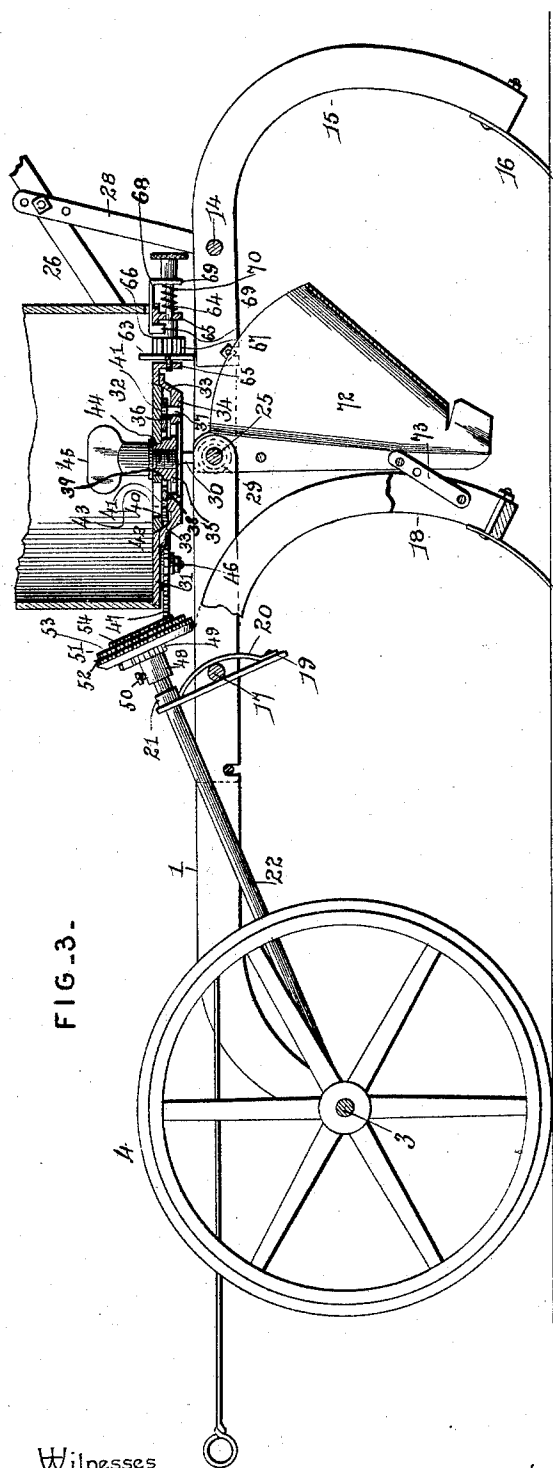


FIG. 3.

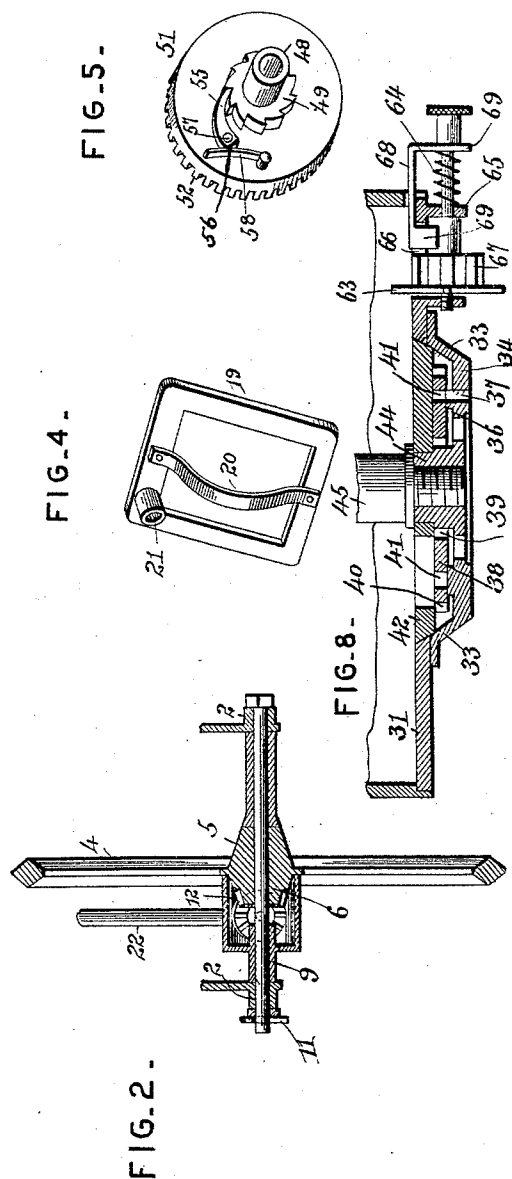


FIG. 4.

FIG. 5.

FIG. 2.

FIG. 8.

Witnesses

Jas. K. McLaughlin
W. S. Duwall

By, *as* Attorneys.

Inventor
James D. Schofield

C. A. Snow & Co.

UNITED STATES PATENT OFFICE.

JAMES DROMMOND SCHOFIELD, OF DALLAS, TEXAS, ASSIGNOR OF TWO-THIRDS TO C. W. PARKER AND PAUL FURST, OF SAME PLACE.

CORN AND COTTON PLANTER.

SPECIFICATION forming part of Letters Patent No. 509,950, dated December 5, 1893.

Application filed July 7, 1893. Serial No. 479,836. (No model.)

To all whom it may concern:

Be it known that I, JAMES DROMMOND SCHOFIELD, a citizen of the United States, residing at Dallas, in the county of Dallas and State of Texas, have invented a new and useful Corn and Cotton Planter, of which the following is a specification.

My invention relates to improvements in planters; and the objects in view are to provide a planter of cheap and simple construction embodying therein improved mechanism for transmitting motion from the drive-wheel to the seed-disk; to so construct said mechanism as to operate only when the planter is being advanced and to remain inoperative when being drawn backward; to provide for a change of speed for the seed-disk so as to plant close together or far apart as may be desired; and to provide a new and improved hood or protector for the gear connection between the drive-wheel and the power-transmitting mechanism, which hood may be readily cast and will preserve the mechanism at this point against the deleterious actions of dust and other gritty matter that would otherwise find its way therein.

Various other objects and advantages of the invention will appear in the following description and the novel features thereof will be particularly pointed out in the claims.

Referring to the drawings:—Figure 1 is a perspective view of a planter embodying my invention. Fig. 2 is a transverse sectional view taken vertically through the ground wheel, the axle, and adjacent parts. Fig. 3 is a vertical longitudinal sectional view through the hopper and the power-transmitting gears and shaft. Fig. 4 is a detail in perspective of the adjustable journal frame. Fig. 5 is a detail in perspective of the cone gear head. Fig. 6 is a detail perspective of the cotton disk, the same being inverted. Fig. 7 is a partial plan and horizontal section of the ground-wheel and its housing. Fig. 8 is an enlarged transverse section through the hopper. Fig. 9 is a plan of the base ring. Fig. 10 is a perspective view of the sliding cut-off.

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

The frame of the machine comprises in this instance opposite beams 1, whose front ends

are downwardly curved and provided with bearings 2, for the reception of an axle 3 upon which is mounted a ground-wheel 4, provided at one side with an elongated hub 5, that extends to the inner side of the adjacent beam, and at its opposite side is provided with a toothed hub 6. Between this latter side of the wheel and the remaining beam there is interposed a cylindrical hood, the same being preferably formed of cast-metal and having its inner end bearing against the face of the hub 6. This hood is provided in its outer closed end with an axial bearing 9 extending at each side of the outer end of the hood and therefore some distance in the same. The elongated hub occupies in conjunction with the wheel and the toothed hub about one-half of the axle, the remaining half being occupied by the hood. The axle may be secured in position in any proper manner, and in this instance is secured by means of a washer and split-pin 11. The hood is provided at one side in its cylindrical wall with a slot 12, the same being adapted to be partially closed through the medium of a pivoted dust-cap or plate 13. The rear ends of the beams 1 have pivoted thereto by a rod 14 or otherwise secured, bifurcated goose-neck standards 15 carrying covering-shovels 16. In advance of the standards 15 the same are connected by means of a transverse tie-rod 17, and to this is secured a central furrow opening standard 18.

The rectangular cast-metal frame 19 is provided upon its rear side with a transverse strap 20 offset from the remainder of the frame and loosely mounted for pivotal movement upon the rod 17. This frame is provided at its upper inner corner with a bearing opening 21, and in said bearing opening there is loosely journaled a rotatable power-transmitting inclined shaft 22, whose lower end passes through the opening 12 in the hood and is provided with a small pinion 24 designed to engage with and be rotated by the toothed hub of the axle. It will be seen that through the medium of this hood all dust is prevented from gaining access to the pinion of the inclined power-transmitting shaft and the toothed hub of the ground-wheel; and furthermore, that the parts composing this

portion of the machine may be readily separated for cleaning, repairing, &c.

Between the tie-rods 14 and 17 and immediately in rear of the furrow opening shovel 5 carried by the latter there is located a transverse tie-rod 25, whose ends project beyond the beams 1 and are connected with the lower ends of the handle-bars 26, whose rear ends project upwardly above and to the rear end of the machine where they are connected by 10 suitable rungs 27. They also have secured adjustably thereto strap-braces 28 whose lower ends are secured to the transverse tie-rod 14 of the frame, whereby the handle-bars 15 are supported rigidly in position.

Upon the tie-rod 25 there is supported a sleeve 29 from which there rises a pair of standards 30. These short standards 30 support a base-ring 31 which constitutes the bottom of the hopper 32, which latter is cylindrical and mounted thereon. Brackets 33 extend from the inner edge of the base-ring and support a stationary disk 34, the said disk being provided with a central upwardly disposed and internally threaded hub 35 and a 25 surrounding annular raised bearing-track 36. Within the track the disk is provided with a seed discharge-opening 37.

38 designates the seed-disk, and the same is provided with a central opening 39, whereby it is adapted to revolve upon the hub, and its under side rests upon the annular track. The periphery of the disk is toothed as at 40, and the said disk is provided with a series of 35 seed-openings 41, which are designed to be consecutively brought into register with the seed-discharge of the stationary disk.

Arranged over the seed-disk is the cut-off 42 and the same is provided at a point above 40 the discharge-opening in the stationary disk with a closed portion, the remaining portion being open or provided with slots 43. The cut-off has a central opening 44 which fits loosely over the upper end of the hollow hub 45 of the stationary seed-disk, and a screw 45 is inserted into the upper end of the hood in a removable manner and its shoulder bears upon the upper side of the cut-off, thus giving the requisite tension to the seed-disk. 50 The opposite edges of the cut-off are provided with shallow recesses, which receive brackets that support the stationary disk under the base-ring. A short stub-shaft 46, depends from the under side of the base ring in line 55 with the power-transmitting shaft, and loosely journaled upon said stub-shaft is a gear-wheel 47, the same having its teeth engaging the teeth of the seed-disk at one side and at its opposite side projecting beyond the base-ring and toward said power transmitting-shaft. 60

The power-transmitting shaft is provided beyond its bearing in the bearing-frame with an adjustable collar 48, the same terminating 65 at its outer end with a ratchet wheel 49 and held upon the shaft at any desired point by means of a binding screw 50. Beyond the ad-

justable collar just described there is a conical head 51, the said head being provided with a plurality of gears 52, 53, and 54, which number may be increased or diminished as desired. The gears are graduated in size, the 70 smallest gear being at the top of the cone-shaped head. The front side of the head is provided with a pivoted pawl 55 having an angular rear end 56, which is pivoted by a pin 57 as shown. The head has, furthermore, secured thereto a spring 58, the free end of which lies upon the pawl and normally presses it into engagement with the ratchet wheel. 80 It will be seen that the pawl may be swung to a vertical position and the spring will not act to throw it into engagement with the ratchet-wheel but will serve to support it in said vertical position and therefore out of en- 85 gagement with the ratchet-wheel.

It is obvious that the cut-off may be removed and in lieu thereof the disk 59 may be substituted. This disk 59 as shown in detail is provided upon its under side with lugs 60 90 which engage with openings in the seed-disk, so that the said disk 59 will move with the seed-disk. The disk 59 is further provided with peripheral or radial arms 61 and with a vertical arm 62. This disk is used when the 95 machine is employed for planting cotton, and during the operation the radial arms or teeth engage with the teeth of a small feed-wheel 63, which is mounted upon a shaft 64 journaled in bearing-ears 65 located in front and 100 in rear of a seed-slot 66 formed in the base ring at the rear side thereof. The slot is of T-shape and has its widest portion occupied by flutes 67, with which the small wheel is provided at its rear side. A sliding cut-off 105 68 of inverted L-shape has lugs 69 that engage with the slot, and at its rear side depends below the base-ring where it is perforated to receive the said shaft. The shaft is provided at its rear end with a milled nut 110 or disk, whereby it may be rotated and interposed between the outer depending end of the cut-off and the outer ear is a coiled spring 70. The front end of the shaft is threaded in the front ear, so that by rotating the same 115 through the medium of the milled-nut or disk the cut-off may cover more or less of the flutes.

Pivoted to the intermediate transverse tie-rod 25 is the seed-spout 72, and a link 73 connects the same loosely with the furrow-opening standard. 120

Various changes in the construction of my invention will readily suggest themselves to those skilled in this class of machines, and I therefore do not limit my invention to those 125 herein shown, but hold that I may vary the same to any degree and extent within the knowledge of the skilled mechanic.

Whether the corn or cotton-disk is employed the operation of the machine is the 130 same, and is as follows:—The rotations of the ground-wheel transmit motion to the conveying-shaft and the ratchet-wheel carried thereby, said ratchet-wheel communicating motion

to the conical gear-head, and said gear-head to the intermediate spur-gear, which then communicates motion to the seed-disk, operating the latter to discharge seed or through the medium thereof to rotate the cotton-disk. In order to change the speed of rotation of either disk, it is simply necessary to loosen the binding-screw in the adjustable collar and move the conical head so that the desired gear-wheel thereof may be engaged with the spur-gear. This, of course, necessitates raising or lowering the rear end of the conveyer-shaft, and the same is permissible by reason of the pivoted frame that forms the bearing for said shaft. The frame may be retained in any of its adjusted positions by a tightening of the nut on the tie-rod 17 upon which said frame is mounted. The planter is of course provided with the usual draft-devices or bail and with any other auxiliaries that may be desired.

Having described my invention, what I claim is—

1. In a planter, the combination with the frame, the hopper, the rotatable seed-disk having teeth, and the intermediate spur gear engaging therewith, of the ground wheel and its axle, an intermediate conveyer-shaft, means for communicating motion from the ground-wheel to the conveyer-shaft, a conical head loosely mounted upon the upper end of the conveyer shaft and having a series of graduated gears for engaging the intermediate spur-gear, means for adjusting said conical head, and means for adjustably supporting or journaling the shaft, substantially as specified.

2. In a planter, the combination with the frame, the hopper, the rotatable seed-disk, and the intermediate spur-gear engaged therewith, of the axle, the ground-wheel, the pivoted bearing frame arranged between the axle and the spur-gear, means for tightening the frame in its positions, the intermediate conveyer-shaft journaled in the frame and receiving motion from the axle, and a conical gear-head arranged loosely upon the upper end of the shaft and adapted to engage with and operate the intermediate gear, and means for adjusting said conical gear-head, substantially as specified.

3. In a planter, the combination with the planter-frame, the hopper, the rotatable seed-disk, and the intermediate gear for operating the same journaled upon a stud depending from the bottom of the hopper, of an axle

journaled in the frame, a ground-wheel carried by the axle and provided at one side with a toothed hub, a transverse tie-rod passing through the frame and provided with a nut, a rectangular bearing-frame having a strap embracing the tie-rod and provided at its upper end with a bearing-eye, an intermediate conveyer-shaft journaled in the eye, a pinion at the lower end of the rod engaging with the toothed hub, a collar loosely mounted on the rod above the bearing-frame and provided with a binding-screw and a ratchet-wheel, a conical gear head for engaging the intermediate spur-gear and loosely mounted upon the upper end of the shaft, a pawl pivoted upon the front end of the conical gear-head and adapted to engage the ratchet-wheel and provided with an angular inner end, and a flat spring for bearing upon the pawl at either side of the angle and thus retaining the same in or out of operative position with relation to the ratchet-wheel, substantially as specified.

4. In a planter, the combination with the frame, the hopper, and seed-disk, of the axle journaled in the frame-bars or beams, the ground-wheel arranged upon the axle, the toothed hub at one side of the ground-wheel, the intermediate conveyer-shaft between the seed-disk and the axle, the pinion on the lower end of the shaft engaging the toothed hub, and the cylindrical hood having its inner open end bearing against the wheel and its outer end provided with an elongated bearing extending to the beam and having an opening in its side-wall for the reception of the conveyer-shaft and provided with a dust-plate for partially closing the same, substantially as specified.

5. In a planter, the combination of the frame, the hopper and the rotatable seed-disk, with the ground-wheel and its axle, an intermediate power-transmitting shaft receiving motion therefrom, a pivoted support through which the shaft passes and in which it is journaled, a head loosely mounted upon the upper end of the shaft, means for adjusting said head, and gearing between the head and the seed-disk, substantially as described.

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

JAMES DROMMOND SCHOFIELD.

Witnesses:

A. V. LANE,

W. G. RODGERS.