(No Model.) 2 Sheets—Sheet 1.

W. DUNKLE.

CORN PLANTER.

No. 369,507. Patented Sept. 6, 1887.

Fig. 1.

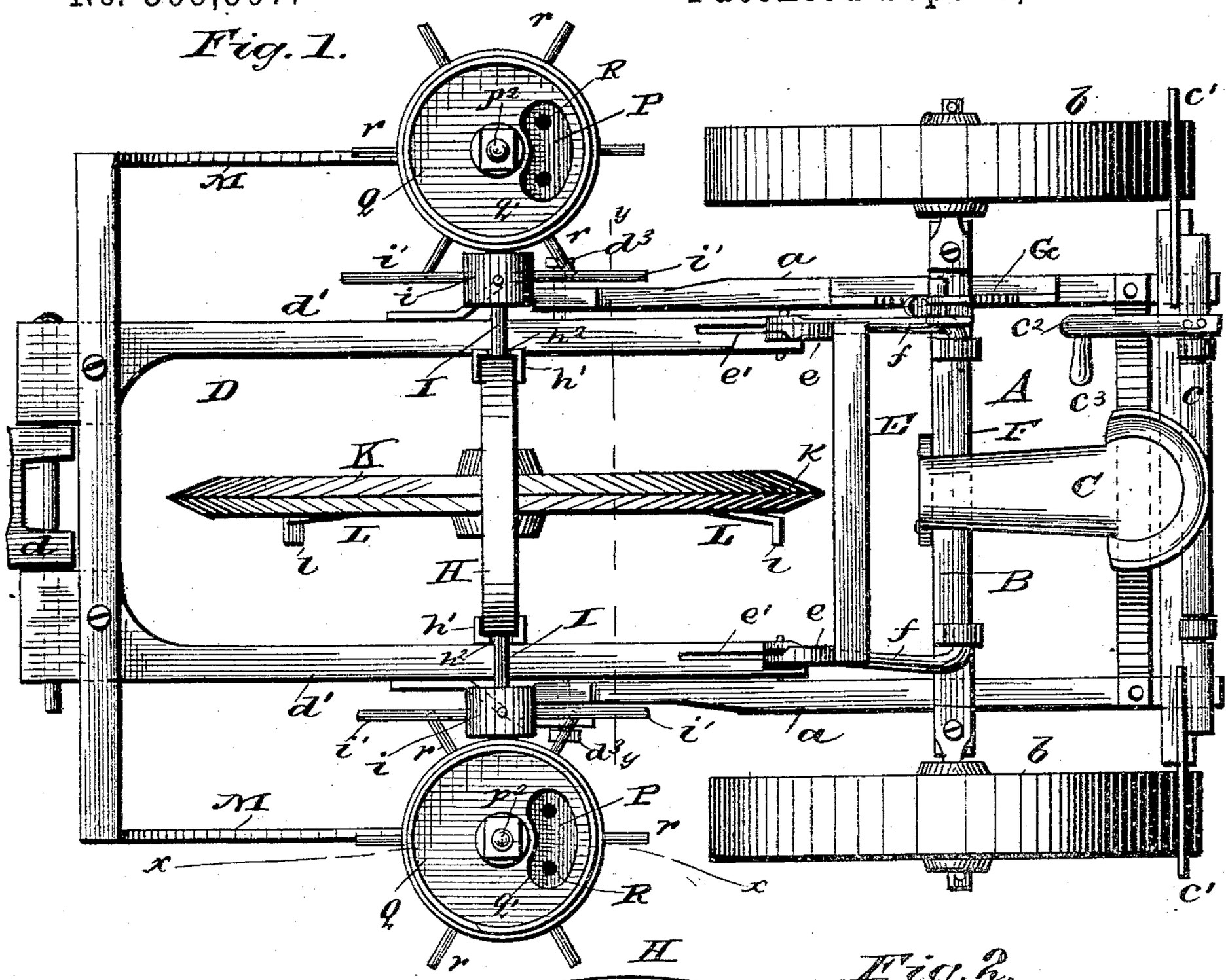
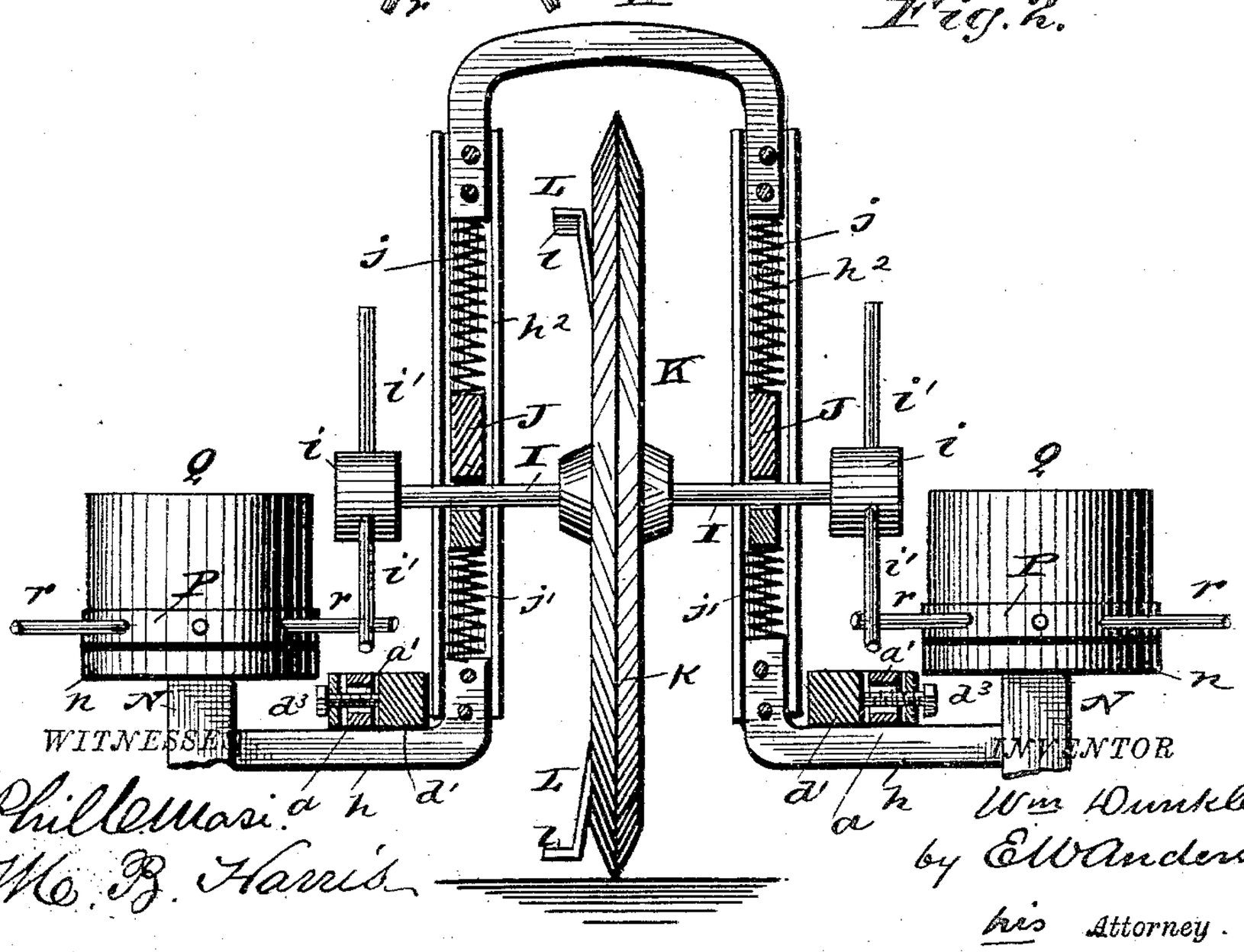


Fig. 2.



(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

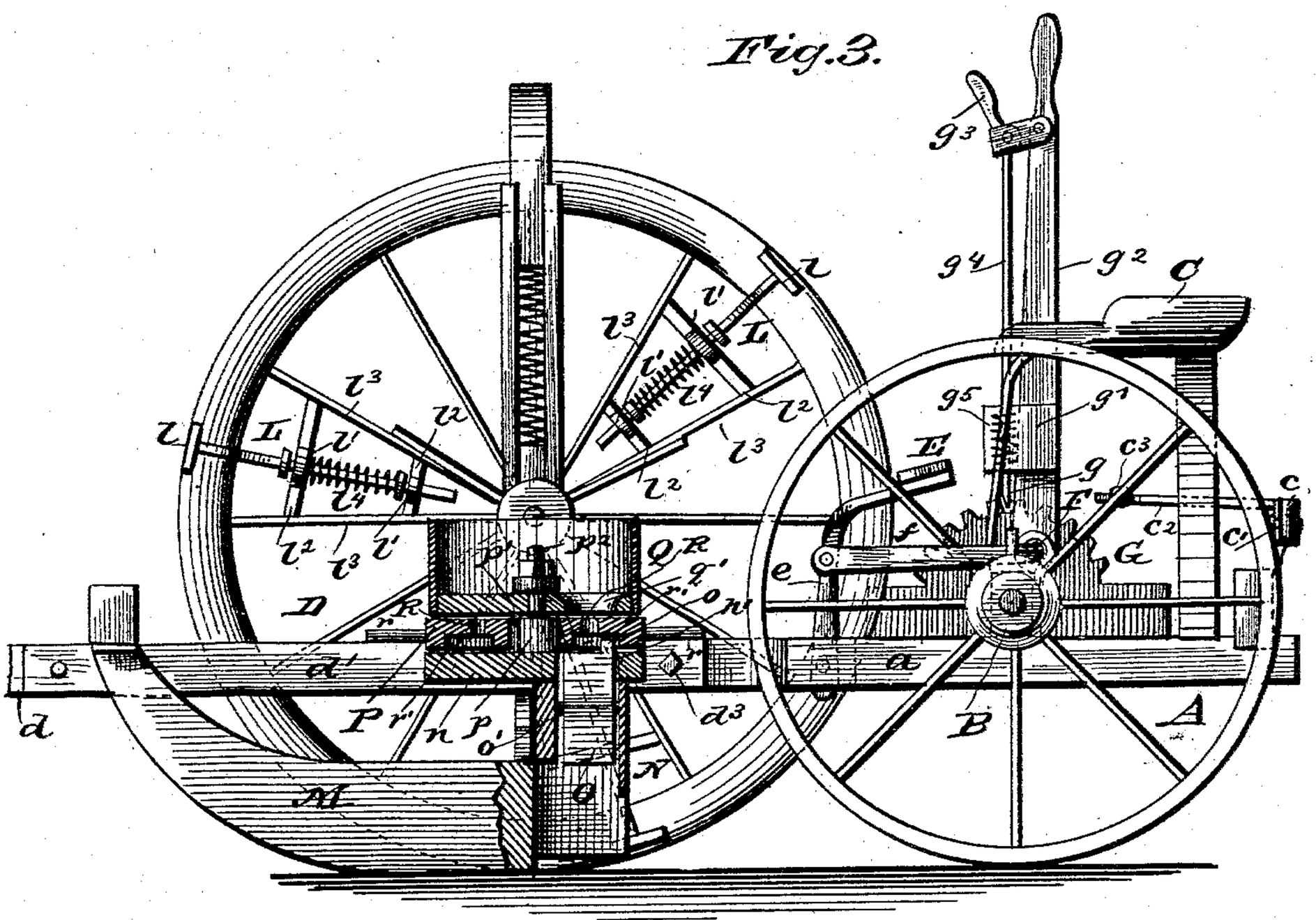

Fig. 4.

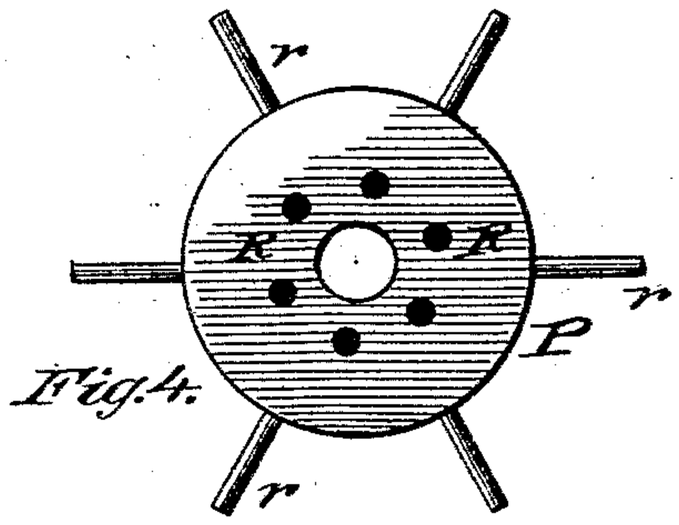

Fig. 6.

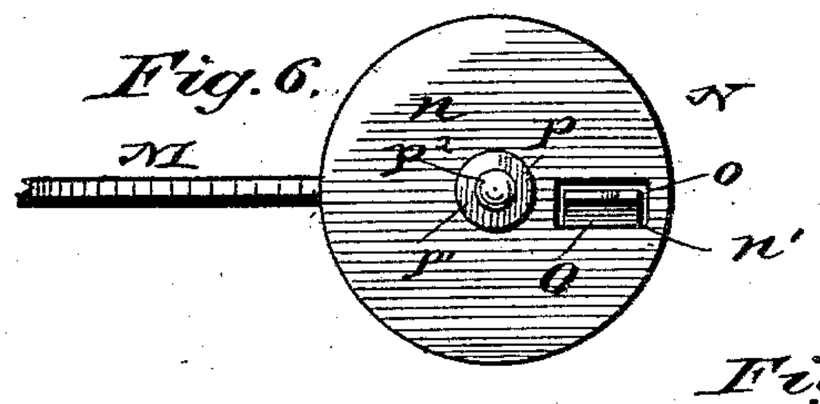

Fig. 8.

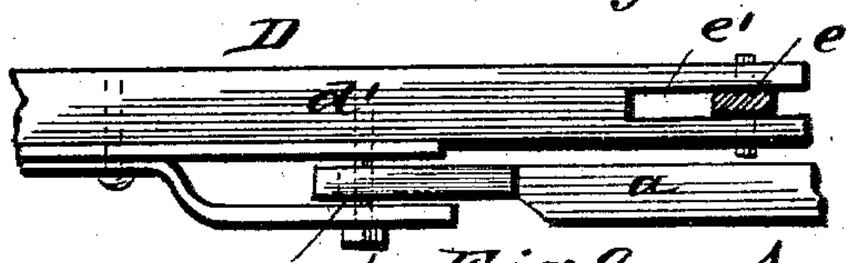

Fig. 5.

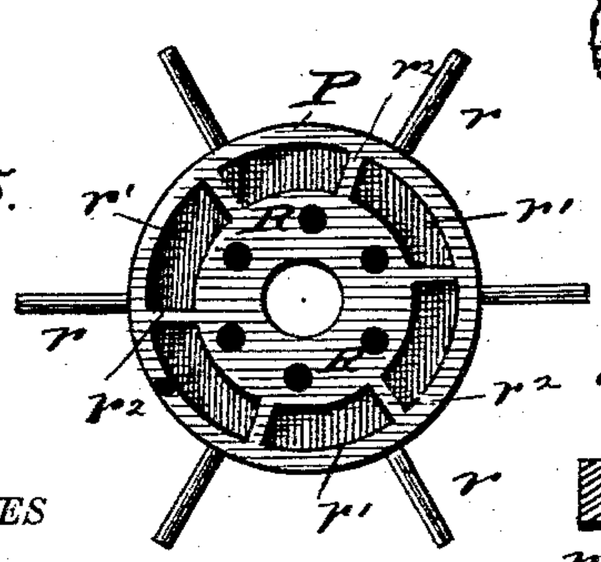

Fig. 9.

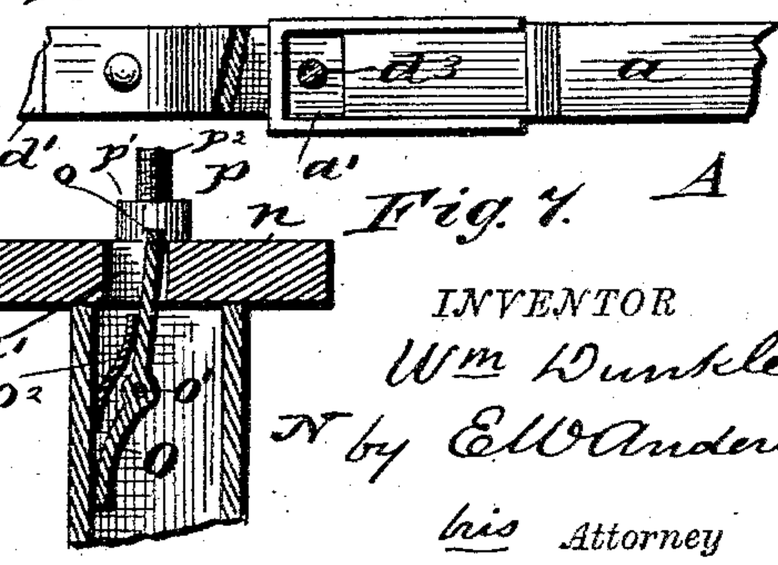

Fig. 7.

WITNESSES

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W. B. Harris

INVENTOR

Wm Dunkle.

by E. W. Anderson

his Attorney

UNITED STATES PATENT OFFICE.

WILLIAM DUNKLE, OF LINDEN, INDIANA.

CORN-PLANTER.

SPECIFICATION forming part of Letters Patent No. 369,507, dated September 6, 1887.

Application filed April 14, 1887. Serial No. 234,830. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM DUNKLE, a citizen of the United States, residing at Linden, in the county of Montgomery and State of Indiana, have invented certain new and useful Improvements in Corn Planters and Markers; and I do 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, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a representation of a plan view. Fig. 2 is a transverse section on line *y y*, Fig. 1. Fig. 3 is a side elevation, partly in section, taken on the line *x x*, Fig. 1. Fig. 4 is a plan view of the rotating dropper. Fig. 5 is a bottom view of the same. Fig. 6 is a detail plan view of the dropper-tube, and Fig. 7 is a vertical section of the same. Fig. 8 is a detail view of a portion of one of the beams *d'* and a portion of one of the side beams, *a*. Fig. 9 is a detail side elevation of the same.

The invention relates to improvements in corn and seed planters; and it consists in the construction and novel arrangement of parts, hereinafter described, illustrated in the drawings, and pointed out in the appended claims.

Referring to the drawings by letter, A designates the main or wheel frame of the machine.

B designates the axle, and *b b* the wheels turning freely thereon.

C is the driver's seat, secured upon uprights rising from the main frame, and *c* is a shaft pivoted in bearings on the rear rail of the frame A and provided with the scraper-blades *c' c'*, which, by means of the cross-piece c^2 and a suitable handle, c^3, standing therefrom within easy reach of the driver, can be turned on the rims of the wheels to clear them from adhering earth.

D is the inner frame, having the tongue *d* attached to its front portion and provided with the side beams, *d' d'*, to which the side beams, *a a*, of the main frame A are pivoted at d^2, the pivotal pins d^3 passing through the vertical slots *a' a'* on the ends of the beams *a a*, which are outward from the beams *d'*, as shown.

E is the transverse foot-rest for the driver, secured on the horizontal upper portions of the angular arms *e e*, the lower ends of which are pivoted in longitudinal notches or slots *e' e'* in the ends of the beams *d'* of the runner-frame.

F is a transverse shaft journaled in bearings secured to the axle and provided with longitudinal arms *f f* outside the same, the bifurcated ends of which arms are pivoted on the upright portions of the arms *e*.

G is an upright rack made on the arc of a circle, and secured upon one of the side beams, *a*, of the frame A. The teeth of the said rack are engaged by a detent or pawl, *g*, moving on a guide, *g'*, secured to the side of a lever-arm, g^2, rising from the corresponding end of the shaft F.

g^3 is a hand-lever connecting with said detent by the link-rod g^4, the detent being forced downward into engagement with the rack by the spring g^5. By means of the said lever, detent, and rack and the shaft E and arms *f* and *e*, the runner-frame can be set in the well-known manner on the main frame to make the hereinafter-described runners penetrate more or less deep in the soil.

H is an upright transverse frame secured to the side beams of the runner-frame and having the dropper-tubes, hereinafter described, secured upon its similar lateral extensions, *h h*, outside of said beams. The vertical arms *h' h'* of said frame are hollow and slotted longitudinally and similarly on their outer and inner sides, the shaft I passing through said slots h^2 h^2, and having the hubs *i* secured to its ends, which hubs are provided with the equidistant radial arms *i' i'*.

The shaft I is journaled in boxes J, fitting in the interiors of the vertical arms *h'* and pressed downward by the coiled springs *j j* above them in said arms.

j' j' are short coiled springs situated below the boxes J and preventing any jarring action of the springs *j*.

K is a wheel secured centrally on the shaft I, and having its rim *k* edged, the cross-section thereof being V-shaped.

L L are radial marker-bars, having the feet *l l* standing at right angles outward to their shanks and passing through openings in the lugs *l' l'*, standing out from the cross-bars l^2 l^2,

secured at their ends to adjacent spokes l^3 of the wheel K. The said marker-bars are equal in number to the radial arms on each hub *i* and are preferably three. Each bar is pinned to the inner side of the inner lug *l* and between the lugs is surrounded by the coiled spring l^4, which gives when the foot of the marker-bar presses on the earth and prevents jar or breakage.

The edged wheel K penetrates in the soil, and, while allowing the markers to score plainly, prevents the rows from becoming irregular and any lateral displacement should one of the runners strike an obstacle, such as a stone.

M M are the furrow openers or runners, of usual shape and construction, extending from the front transverse bar of the runner-frame to the lower end of the dropper-tubes N, which are rectangular in cross-section and have secured to their upper ends the fixed dropper-disks *n*, provided with the slots *n'*, through which slot projects the reduced end *o* of the spring-droppers O, each of which is pivoted at *o'* in the corresponding dropper-tube, and is pressed upon its pivotal point by the spring o^2, secured within the said tube in such manner that while its upper edge rests against the one edge of the slot *n'* its lower edge rests against the opposite side of the dropper-tube. Each spring dropper-plate is as wide as the interior of the dropper-tube, so that when in the position described it cuts off communication with the part of said tube below.

P P are the rotating dropper-plates, each having a central circular opening, so as to turn upon a cylindrical projection, *p*, rising centrally from the fixed dropper-disk *n*. The projection *p* has above its shoulder *p'* a tapped end, p^2, to secure upon it the seed-box Q, preferably rectangular, and having its floor *q* provided with the concentric slot *q'*, resting on the shoulder *p'*, with the tapped end p^2 passing through a central opening in it and engaged above by a nut and washer to keep the seed-box from turning. Each rotating dropper-disk is situated between the floor of the corresponding seed-box and the fixed dropper-disk, and is provided with the series of equidistant openings R, concentric with its center and registering with the slot *q'*, the equidistant arms *r* standing radially outward from its edge and on its under surface, with the curved recesses *r'* concentric with its center and separated by the transverse bridges r^2. The openings, radial arms, and recesses are equal in number, which number is preferably six.

As the wheel K rotates, the arms *i'* on the hubs *i* strike the arms *r* on the rotating dropper-disks and move said disks partially around, moving the openings R, filled with grain from the seed-box, through the slot *q'*, toward the slots *n'* of the fixed dropper-disks. The said openings R, upon reaching the slot *n'*, allow the grain to fall therethrough upon the spring dropper-plates O, which retain the grain until the next following bridge, r^2, strikes against its projection *o* and forces its lower end away from the side of the dropper-tube N against the action of the spring o^2, so as to allow the grain to fall into the furrow made by the runner. The grain has thus two drops—one produced by the movement of the rotating dropper-disk, allowing it to fall on the dropper-plate O, and the other by the dropper-plate being opened from the dropper-tube, as described. The planting of the seed is thus better regulated.

The springs above the boxes of the shaft of the edged wheel allow said shaft to give, so that when the runner-frame is turned to different angles on the main frame the depth to which said wheel penetrates the soil is kept very nearly equal.

Having described this invention, what I claim, and desire to secure by Letters Patent, is—

1. In a planter, the combination, with the main frame and runner-frame adjustable on each other, of the vertical frame rising from the runner-frame and provided with hollow slotted vertical legs, the journal-boxes sliding on said legs, the coiled springs pressing down on said journal-boxes, and the edged wheel having its shaft journaled in said boxes, substantially as specified.

2. In a planter, the combination, with the main frame and runner-frame adjustable on each other, of the vertical frame rising from the runner-frame and provided with hollow slotted vertical legs, the journal-boxes sliding on said legs, the coiled springs bearing down on the journal-boxes, the edged wheel having its shaft journaled in said boxes, and the radial equidistant spring-controlled markers attached to said wheel, substantially as specified.

3. In a planter, the combination of the edged wheel, the links on the ends of the shaft of said wheel, and the equidistant radial arms of said hubs with the dropper-tubes, the seed-boxes having concentric slots in their floors, the rotating dropper-disks having series of equidistant concentric openings registering with said slots, and the equidistant radial arms of said disks, substantially as specified.

4. In a planter, the combination, with the edged wheel, the hubs on the ends of the shaft of said wheel, and the equidistant arms of said hubs, of the dropper-tubes, the seed-boxes having concentric slots in their floors, the rotating dropper-disks having series of equidistant concentric openings registering with said slots, the equidistant radial arms of said disks, and the fixed dropping-disks, each provided with a slot registering with the openings of the corresponding rotating disks, substantially as specified.

5. In a planter, the combination, with the edged wheel, the hubs on the ends of the shaft of said wheel, and the equidistant radial arms of said hubs, of the seed-boxes having concentric slots on their floors, the rotating dropping-disks having series of concentric openings registering with said slots, series of con-

centric recesses on their under surfaces, and equidistant radial arms, the fixed dropping-disks, each having a slot registering with the openings on the corresponding rotating dropping-disks, the dropping-tubes, and the pivoted spring-controlled dropping-plates, each having a projection on its upper end passing through the slot of the corresponding fixed dropping-disk and actuated by the bridges between the recesses of the corresponding rotatory dropping-disk, substantially as specified.

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

WILLIAM DUNKLE.

Witnesses:

JOHN W. RAMSAY,

JERE WEST.