2 Sheets—Sheet 1.

J. B. GREENE.

CORN-PLANTER.

No. 192,255. Patented June 19, 1877.

Fig. 1

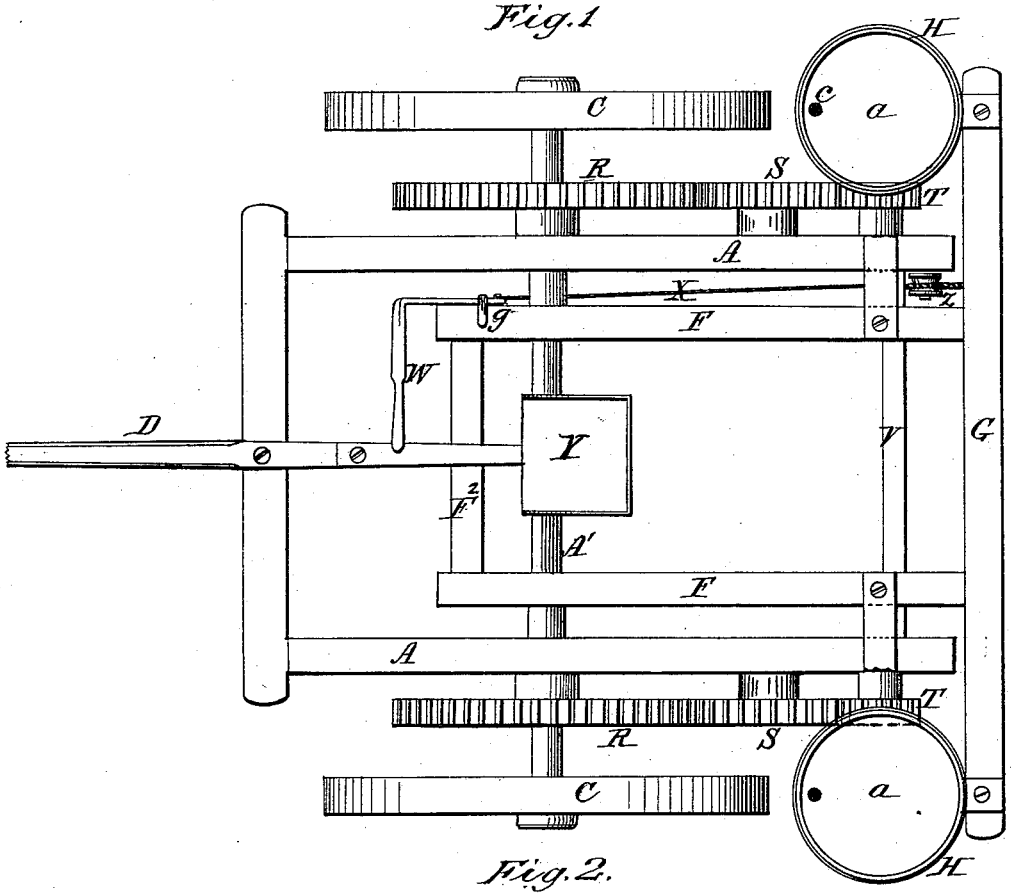
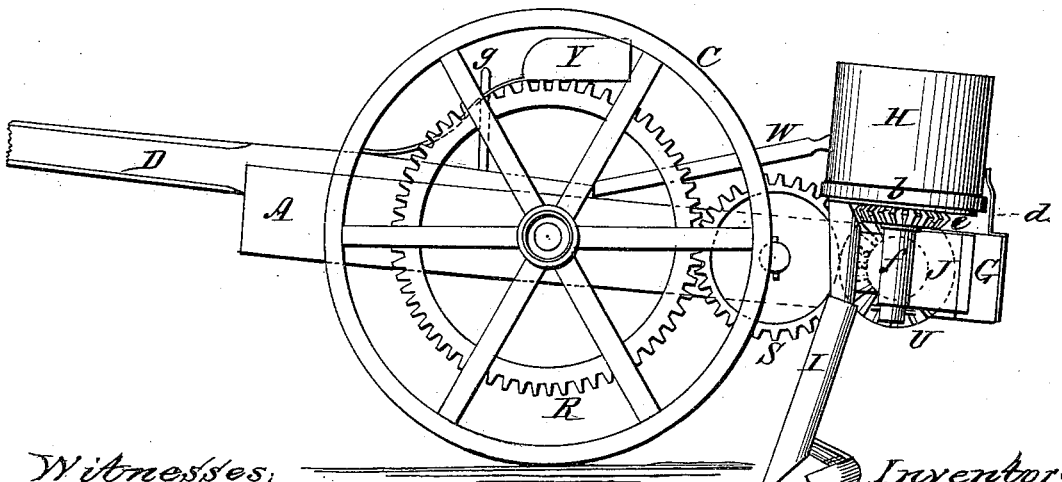


Fig. 2.



Witnesses;
Floyd Norris
D. P. Lowe

Inventor;
James Brannwell Greene
by Johnson & Johnson
Attys

2 Sheets—Sheet 2.

J. B. GREENE.

CORN-PLANTER.

No. 192,255. Patented June 19, 1877.

Fig. 3.

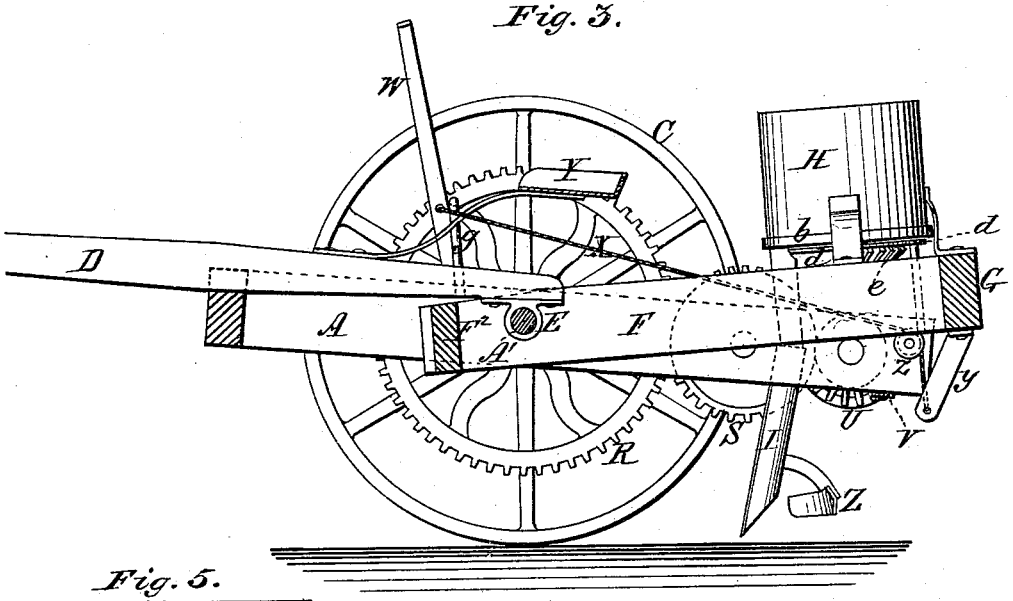


Fig. 5.

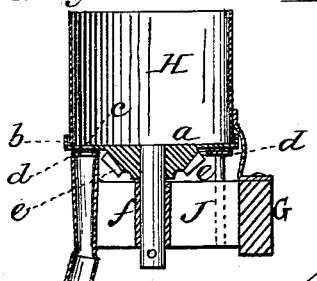
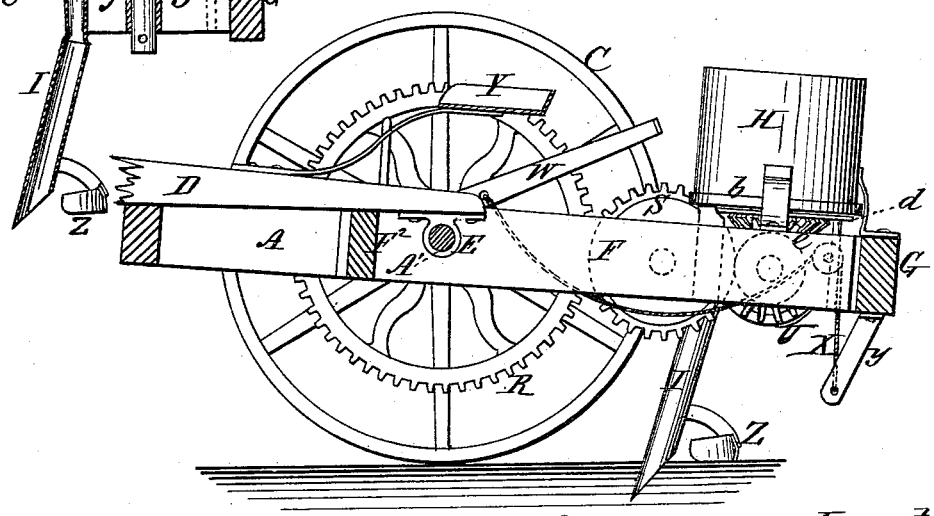


Fig. 4.



Witnesses:
Floyd Norris
S. P. Lowe

Inventor:
James Braunwell Greene
by Johnson & Johnson
Attys

UNITED STATES PATENT OFFICE.

JAMES B. GREENE, OF COATESVILLE, INDIANA, ASSIGNOR OF ONE-HALF HIS RIGHT TO NELSON GREENE, OF SAME PLACE.

IMPROVEMENT IN CORN-PLANTERS.

Specification forming part of Letters Patent No. **192,255**, dated June 19, 1877; application filed March 16, 1877.

To all whom it may concern:

Be it known that I, JAMES BRAMWELL GREENE, of Coatesville, in the county of Hendricks and State of Indiana, have invented a new and useful Improvement in Corn-Planters, which improvement is fully set forth in the following specification and accompanying drawing.

My invention relates to that class of corn-planters in which revolving disk-droppers are employed.

The draft-frame is hung upon the axle of the supporting-wheels, and carries gear-pinions, which match with gear-wheels, on the axle, said gear being arranged at each side of the frame, and constituting the operating mechanism for the dropping devices. These dropping devices are arranged upon the outer rear corners of a supplemental frame, also hung upon the axle inside of the main frame, in a manner to bring the drill-tubes in positions in rear of the supporting roller-wheels and outside of the operating-gearing. The dropping of the corn is effected by revolving perforated disks, which form the bottoms of the hoppers, and which are provided on their under sides with bevel-pinions, adapted to gear with like pinions on the rear outer ends of the main frame, and connected with the side train of gear, and, by such adaptation, drive the droppers by maintaining their pinions in gear by the partial weight of the supplemental frame.

This will be readily understood, as such frame hangs upon the axle in position to bring the dropper-pinions in gear with the drive-pinions on the main frame.

By this arrangement the dropper-frame is rendered independent of the main frame, in order that it may be raised to stop the planting and take the drill-tubes out of the ground whenever it is desired to do so, and this without shifting or interfering with the gear. The descent of the supplemental frame brings the droppers at once into gear with the operating mechanism. The forward end of this frame extends beyond the axle and beneath the inner end of the tongue, so as to rest against it and form a stop to relieve the whole weight of the supplemental frame from the driving-pinions of the main frame, as such pinions, being carried by short axles, would be liable to be broken off or be subject to too great strain.

This construction also relieves the dropping-disks from too great friction upon the hoppers, and causes the disks to run easier, and their supporting angle-irons are rendered free from upward strain by the dropper-connection therewith. In fact, it makes a sort of balance for the working pinions of the two frames.

The droppers and their hoppers are carried by angle-irons, which are adapted to carry the drill-tubes and the bearings for the short vertical axles of the revolving dropping-disks, thus making a strong and durable attachment of these parts to the rear bar of the supplemental frame.

Referring to the drawings, Figure 1 represents a top view of a machine embracing my invention; Fig. 2, a side elevation of the same; Fig. 3, a vertical longitudinal section, showing the supplemental frame elevated to throw its droppers out of gear and elevate its drill-tubes; Fig. 4, a similar section, showing these parts in the positions they occupy for planting; and Fig. 5, a section of the dropping-disks.

The main frame A is hung upon the carrying-wheels C C, and the tongue D, having a fixed connection with such frame, is connected to said axle by a loop or eye, E, to allow of the turning of the axle A′.

A supplemental frame, F, is also hung upon the axle by two pieces arranged within the side beams of the main frame, and in such relation thereto as to be capable of being raised and lowered independently thereof, and carry the seed-hoppers and drill-tubes, in rear of the supporting roller-wheels, upon a cross-beam, G, to the projecting ends of which said hoppers are secured, so as to bring the drill-tubes outside of the operating-gear. These hoppers H are cylindrical, and are secured to said cross-beam, and their bottoms form the dropping-disks *a*, each having an outer curb, *b*, which fits the hopper, and a hole, *c*, through which, as the disk revolves over the drill-tube, the seed passes into the ground. Each of these dropping-disks is fitted upon and supported by a horizontal ring-plate, *d*, mounted upon the drill-tube I and an angle-iron J secured to the outer rear corners of the

supplemental frame and extending inward toward the supporting-wheels.

The drill-tube of each hopper extends downward from the inner end of this angle-iron, and is a fixture therewith.

To the under side of each dropping-disk a bevel-pinion, *e*, is secured, fitting within the ring-plate *d*, and having its short vertical shaft in bearings *f* in the angle-iron; the ring-plate, therefore, forms the bearing for the dropping-disk, and allows the free working of its operating-pinion, while the angle-iron sustains these several parts independent of the hopper. (See Fig. 5.)

The driving-gear consists of three spur-wheels, relatively proportioned for a special purpose, and arranged to match with each other upon the outer sides of the side beams of the main frame.

Of these, the two largest ones, R R, are mounted upon the axle, and the two smaller ones, S S and T T, are mounted upon short axles on the outer sides of the main frame. Upon the axles of the smallest pinions T T, and secured to such pinions, are bevel-pinions U U of equal diameters with the pinions *e* of the dropper-disks, and arranged in relation thereto so as to engage and operate the droppers when the supplemental frame is lowered to working position. As this frame hangs with its full weight at the rear of the machine it would bear too heavily upon the short axles of the operating-gear of the main frame, and to avoid this the supplemental frame extends in front of the axle a short distance and beneath the tongue, and by means of a front cross-bar, F^2, is supported against the tongue, and holds the rear of the supplemental frame from pressing down too heavy upon the lower pinions, and at the same time relieves the dropper-disks from undue friction and upward pressure upon the hoppers, and takes off all undue weight and pressure from the angle-iron supports by giving a sort of balance matching of the dropper-gear with the lower pinions.

The main frame has a tie-bar, V, connecting and bracing its rear ends. The supplemental frame is raised by means of a hand-lever, W, pivoted to its front end and connected by a chain, X, to an arm *y* at the rear of said frame, in position to bring the chain over a pulley, *z*, on the rear inner side of the main frame. When thus raised the hand-lever is held by a catch, *g*, on the supplemental frame and near the driver's seat Y, which is mounted upon the tongue, so as to bring his weight over the axle.

The drill-tubes have covers Z attached to their lower ends to cover the dropped seed.

The supporting-wheels are of large diameter, and have broad treads, and form, in effect, rollers to roll the ground before the drill-tubes, and pulverize the earth and give it a mellow condition to receive the grain.

The planting in check-rows is effected in the following manner:

The supporting roller-wheels C are, say, seven feet eight inches in circumference, and the axle spur-wheels twenty inches, the intermediate pinions being five inches, and the revolving droppers ten inches in diameter. One revolution of the supporting or roller wheels will pass over seven feet eight inches of ground, giving the dropper-disks two revolutions, and thus drop the seed every three feet ten inches, which is the distance across between the droppers. By crossing a line off on each side of the field, so as to start even from the point the seed was last dropped before turning the machine, it is plain that the field will be planted both ways, or in check-rows.

The machine can be adapted as a drill by substituting dropper-disks having two or more holes, thus combining planter and drill. Several grains of corn may be dropped at the same time by having the hole *c* large enough, and a shield may be placed over the hole to regulate the filling of the holes. This shield is elastic.

I claim—

1. The supplemental frame F hung upon the axle A′, the hoppers H, their dropping-disks *a*, pinions *e*, and drill-tubes I arranged at the outer ends of said frame-bar G, in combination with the draft-frame A, having the operating-gearing R S T U arranged outside of both frames, and between the outside frame and the hoppers and their dropping devices, as and for the purpose described.

2. The seed-dropping devices arranged upon the outer rear corners of the supplemental frame F, outside of the operating-gearing, and in rear of and in line with the supporting roller-wheels, said supplemental frame being adapted to be raised and lowered upon the axle to put its planting devices in or out of gear without regard to the operating-gearing, substantially as herein set forth.

3. The angle-irons J combined with the supplemental frame F, the dropper-disks *a*, the drill-tubes I, and the operating-gearing, as described, and serving as the supports for the dropper-disks, their ring-plate bearings *d*, bevel-pinions *e*, and drill-tubes I, substantially as herein set forth.

4. The combination, with the revolving disk-dropper *a* and its attached bevel-pinion *e*, of the ring-plate bearing *d* and the drill-tube I, as and for the purpose stated.

5. The supplemental frame F, hung upon the axle so as to extend in front thereof, as described, in combination with the operating-gearing for the dropper-disks and the tongue D of the machine, whereby the weight of the rear portion of the supplemental frame is relieved from the short axles of the operating-gear of the draft-frame, as described.

In testimony whereof I have hereunto set my hand in the presence of two witnesses.

JAMES BRAMWELL GREENE.

Witnesses:

E. R. ELLIS,

T. H. PIERSON.