2 Sheets—Sheet 1.

H. JONES.

Corn-Planters.

No. 196,908. Patented Nov. 6, 1877.

FIG. 1.

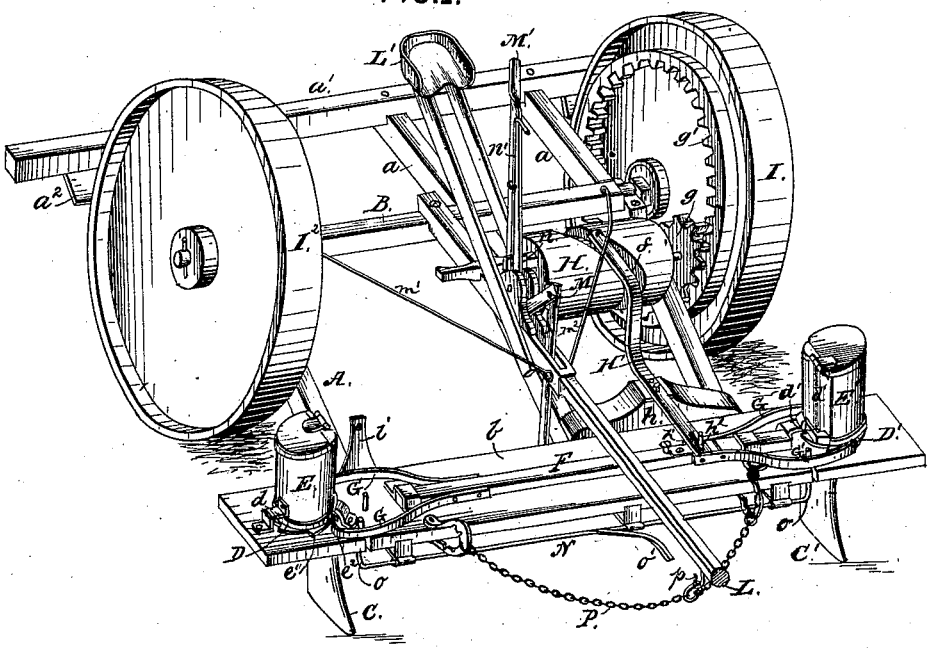
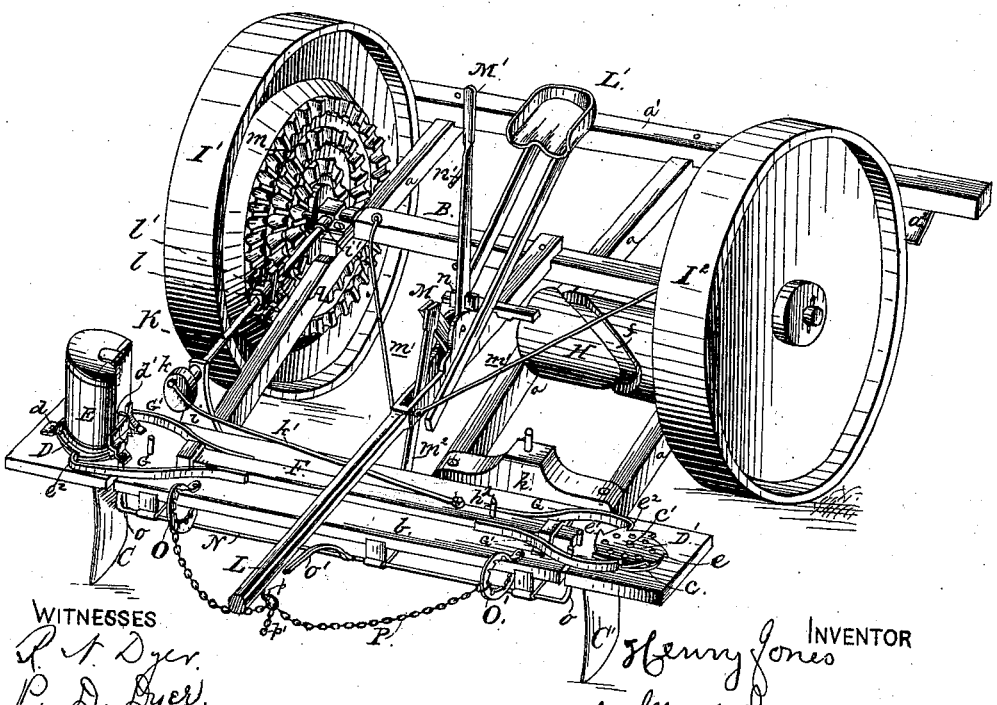


FIG. 2.



WITNESSES

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2 Sheets—Sheet 2.

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FIG. 3.

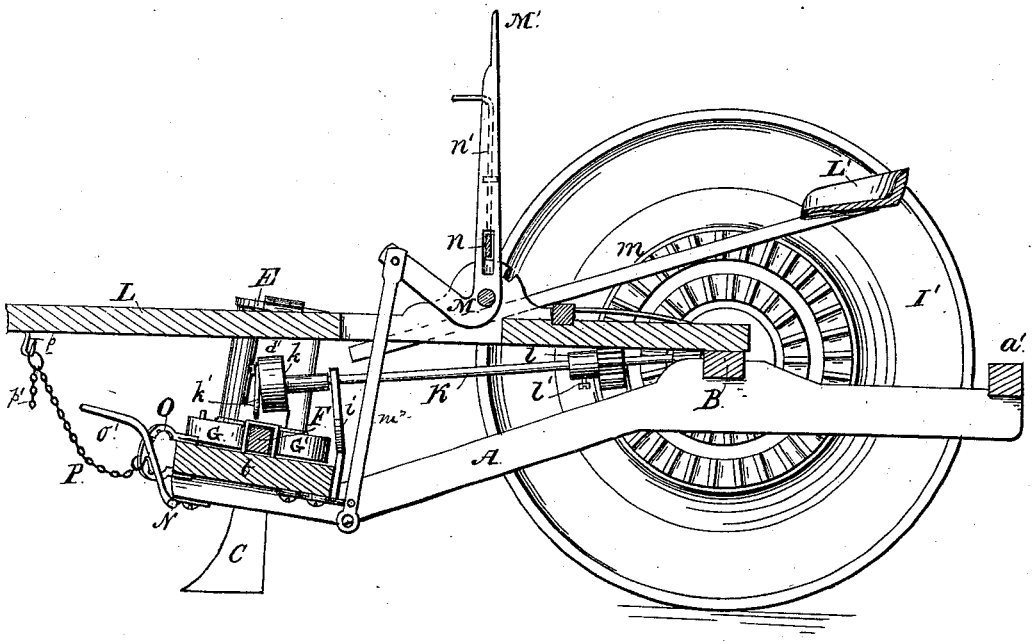
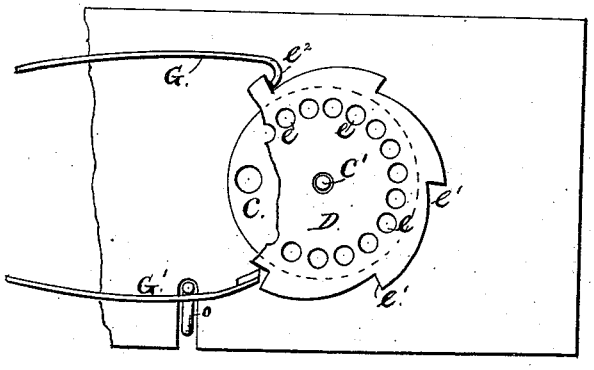


FIG. 4.



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UNITED STATES PATENT OFFICE.

HENRY JONES, OF COSHOCTON, OHIO.

IMPROVEMENT IN CORN-PLANTERS.

Specification forming part of Letters Patent No. **196,908**, dated November 6, 1877; application filed July 16, 1877.

To all whom it may concern:

Be it known that I, HENRY JONES, of Coshocton, in the county of Coshocton and State of Ohio, have invented a new and useful Improvement in Corn-Planters; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The object I have in view is the production of a corn-planter which will have simple and effective means for operating the seed-dropping plates, and for stopping the operation of the same when the furrow-openers are raised from the ground, devices for changing the speed of the drop and regulating the distance between the hills to be planted, and a simple contrivance for regulating the draft of the planter, all forming a very convenient and effective machine; and my invention therein consists, first, in the devices for operating the seed-plate through connection with the wheels of the planter; second, in the peculiar means for stopping the drop when the drills or furrow-openers are raised from the ground; third, in the means for regulating the draft; and, further, in the various combinations of the operative parts, all as more fully hereinafter explained.

In the drawings, Figure 1 is a perspective view, showing the seed-dropping mechanism as operated by a cam and lever; Fig. 2, a perspective view, with a crank-shaft mounted in position to work the slide-bar, and adapted to have its rate of revolution varied; Fig. 3, a central longitudinal section of Fig. 2, and Fig. 4 a view of one of the seed-dropping plates and operating devices with the seed-box removed.

Like letters denote corresponding parts in each figure.

A is the frame of the machine, upon the longitudinal beams *a* of which is mounted the axle B, carrying on its ends the supporting and covering wheels. A cross-beam, a^1, at the rear supports the scraping-plates a^2, which scrape the rim of the wheels, and a much wider beam, *b*, is secured across the front ends of the longitudinal beams *a*, and carries the seed-boxes and dropping-plates, and a part of the mechanism for operating such plates. C C′ are the drills or furrow-openers, which are attached to the under side of the beam *b* near the ends thereof. These furrow-openers have the usual seed-passage leading through them and the beam *b*. Upon the beam *b* are mounted two circular plates, *c*, each having a single hole near its periphery, which holes rest over the seed-passages. Upon these plates are set two other circular metallic plates, D D′, which are journaled and adapted to revolve on studs c^1, projecting up through the plates *c*.

Over the plates D D′ are set the seed-boxes E E′, which are made preferably of metal, in the form shown in the drawing. These boxes are supported above and almost in contact with the plates D D′ by brackets *d*, and have one side flattened, as shown at *d′*, to form receptacles outside of the seed-boxes, and directly over the seed-passages in which the grains of corn pass, and may be seen before being dropped into the seed-passages.

The plates D D′ have a number of holes, *e*, formed in them, which revolve in line with the holes in the plates *c*, and convey the grains of corn from the seed-boxes into the receptacles *d′*. On the periphery of these plates are formed ratchet-teeth e^1, through which they are operated.

F is the seed-slide, mounted in straps on the beam *b*, and not extending the entire distance between the seed-boxes. To the sides of the seed-slide, near each end, are secured two spring-arms, G G′, extending outwardly, and pressing against the edges of the plates D D′, where they project beyond the sides of the seed-boxes.

The arms G have a hook, e^2, bent on their outer ends, to draw against the teeth of the ratchets e^1, while the ends of the arms G′ (without hooks) are bent slightly inward, as shown, and push against the teeth of the ratchets on the opposite sides of the plates, thus imparting, when the seed-slide is reciprocated, a positive rotation in the same direction to both of the plates D D′. The plates will thus both drop the corn at the same time, and by the operation of the arms G G′ there will be a positive stop (for an instant only) of

the plates just as the seed-passage is reached, insuring greater certainty in the dropping of the grains.

I have designed to use in my machine two devices for giving a reciprocating motion to the seed-slide, which are adapted to be applied alternately—one imparting an unchangeable movement to such slide to plant the hills a certain distance apart, and the other a motion which can be varied in its speed, so that the space between the hills may be regulated as desired. The former I shall first describe.

Upon one side of the machine, near the axle, is mounted a cam-cylinder, H, having the cam-groove *f*. The axis of this cylinder is journaled in boxes secured to the longitudinal beams *a*, and one end of the axis is extended beyond the outer beam *a*, and has mounted thereon a cog-pinion, *g*. This pinion meshes with an annular toothed rack, *g'*, secured to the inner side of a wheel, I, and as the planter is moved the cam-cylinder is revolved by the turning of this wheel. H' is a lever, which is pivoted near the beam *b* on a block, *h*. The long arm of this lever projects toward the rear of the machine, and is bent to accommodate itself to the position of the cam-cylinder. A friction-roller hangs from the under side at the end of this arm of the lever, and enters the cam-groove *f*. The short arm of the lever is slotted, as shown at h^1, and a stud, h^2, on the seed-slide F projects through this slot. It will thus be seen that the seed-slide will be reciprocated, and the dropping-plates operated, through the cam H and lever H', and the hills of corn planted at regular intervals.

On the other side of the machine from which the cam-cylinder and its lever are placed is mounted a shaft, K, running lengthwise of the frame A, and journaled at one end in a standard, *i*, and at the other in a box, *i'*, secured to one of the longitudinal beams *a*, close to the axle B. This shaft extends forward beyond the standard *i* to a point over the seed-slide, and has a crank wheel or arm, *k*, secured on its end, from which a pitman, *k'*, runs to, and is connected with, the said seed-slide. Inside of the box *i'*, and between it and the standard *i*, is sleeved on the shaft K a cog-pinion, *l*, which is secured to the said shaft by a set-screw, *l'*.

I^1 is a covering-wheel, having a broad rim similar to the wheel I. On the inner face of this wheel near the hub are set two or more circular rows of cog-teeth, *m*, of the proper size to mesh with the pinion *l*. The pinion *l* may be adjusted on its shaft to engage with any one of these rows of cogs, and by these means the operation of the seed-dropping mechanism can be varied, and the distance between the hills to be planted changed, as desired.

When the cam attachment is used to run the drop, Fig. 1, I mount on the opposite end of the axle from the wheel I a wheel, I^2, which is of plain construction, with a broad rim, and does not interfere with the pinion *l*. The shaft *k* may be entirely removed from the machine, or the pitman *k'* simply disengaged from the seed-slide.

When the crank-shaft is employed to operate the seed-slide, Fig. 2, the wheel I^1 is mounted on the end of the axle in place of the wheel I^2, and the wheel I^2 set on the other end of the axle instead of the wheel I.

In the manufacture of this machine I have designed to have the three wheels and the other attachments described furnished, so they can be applied by the farmer when he desires to use them, which can be easily done by the use of a wrench.

L is the tongue to the corn-planter, which passes over a part of the frame A, and is rigidly secured at its inner end to the center of the axle B, the axle being adapted to rock on the frame A, and the tongue to move with it. Braces m^1 also connect the tongue with the axle. The driver's seat L' is mounted on the tongue L in the position shown in the drawing.

M is a bell-crank lever, pivoted in a slot in the tongue, and having one part extended upwardly to form a hand-lever, M', situated so as to be moved either backward or forward by the driver in his seat. The other arm of the lever projects forward, and has pivoted to it a link, m^2, which passes down through the slot in the tongue, and is joined to the under side of the beam *b*. By means of the lever M M' and the connecting-link, the frame A can be lifted from the ground when the machine is turning at the end of a row or being moved from field to field, and the furrow-openers may be forced into the ground to any desired extent when the machine is in operation. A drop-catch, *n*, worked by a rod and handle, *n'*, holds the lever M' when thrown back, and supports the frame A in an elevated position. To stop the operation of the dropping-plates during the time that the furrow-openers are raised from the ground, I journal a rock-shaft, N, in hangers on the under side of the beam *b*. This rock-shaft has an arm, *o*, at each end, which arms project up through slots in the beam *b*, inside of the outer spring-arms G G'. The rock-shaft is also provided with an arm, *o'*, at its center, directly under the tongue. When the frame A is raised the tongue presses against the arm *o'*, and turns the rock-shaft a short distance, which moves the arms *o* outwardly, and disengages the two outer spring-arms from their ratchets.

In planting with machines as heretofore constructed, great trouble has been experienced from uneven draft. To remedy this, and provide at the same time a simple device for changing the depth of planting, two clevises, O O', are secured to the front of the beam *b*, some distance each side of the center. To these clevises are attached the ends of a chain, P, whose center is provided with a ring, which is hung on a hook, *p*, secured to the under side of the tongue. A short chain, *p'*, extends from the ring, and is attached to the whiffletrees.

Having thus fully described my corn-planter and explained some of its advantages, what I claim as my invention, and desire to secure by Letters Patent, is—

1. In a corn-planter, the slide F, carrying the spring-arms G G′, and provided with pin h^1, for attachment of crank and gear mechanism, and with pin h^2, for connecting the lever and cam mechanism, substantially as and for the purposes set forth.

2. In a corn-planter, the rock-shaft N, having an arm, o', adapted to be moved by the tongue of the planter when the main frame is raised from the ground, substantially as and for the purposes set forth.

3. The combination, with the seed-slide F and spring-arms G G′, of the rock-shaft N, adapted to be moved by the raising of the main frame, and having arms which disengage the said spring-arms from their ratchets, substantially as described and shown.

4. In a corn-planter, the combination of the two clevises O O′, joined by a chain, P, which is connected centrally with the whiffletrees, substantially as described and shown.

This specification signed and witnessed this 11th day of June, 1877.

HENRY JONES.

Witnesses:
ALEX. MCCLURE,
JOHN EWING.