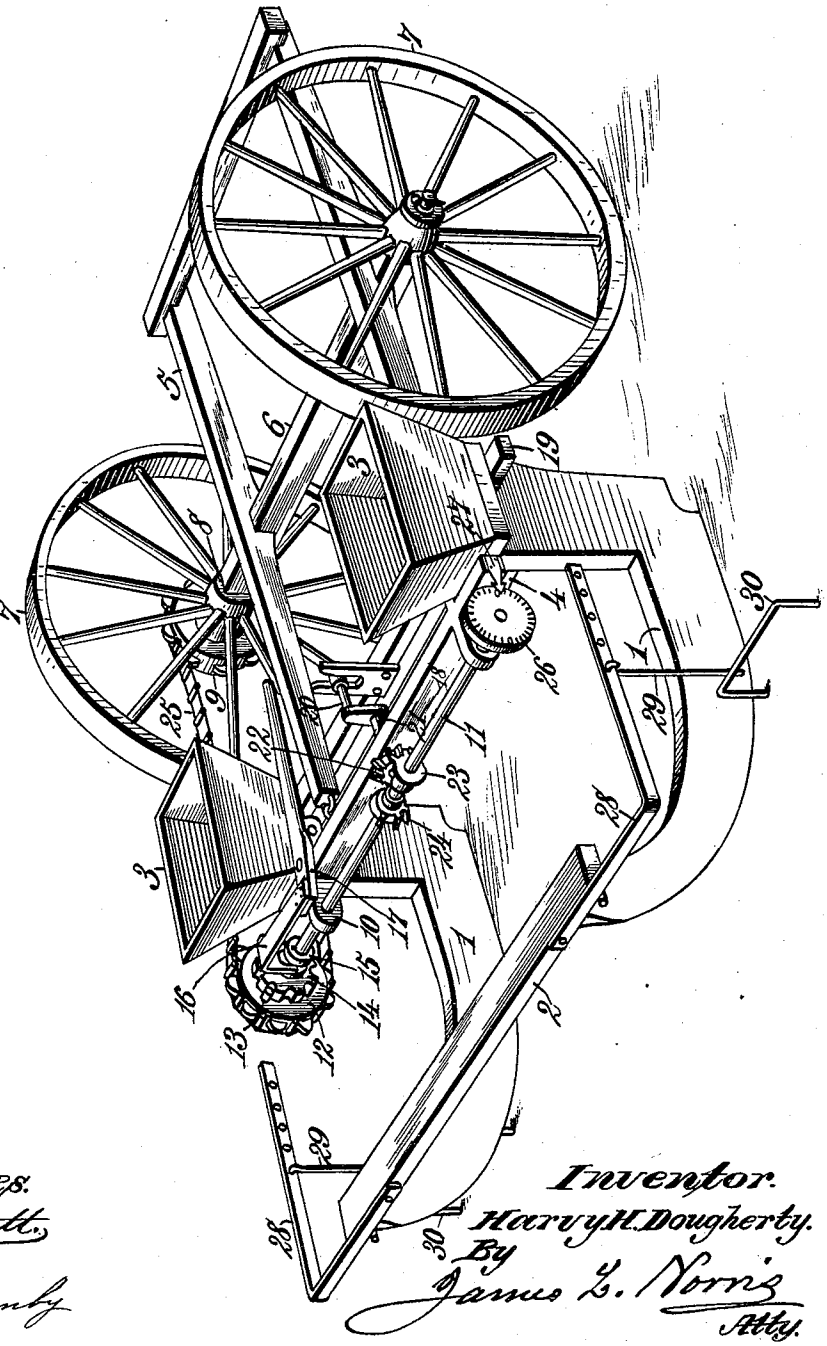
(No Model.) 2 Sheets—Sheet 1.

H. H. DOUGHERTY.

CORN PLANTER.

No. 481,852. Patented Aug. 30, 1892.

Fig. 1.



Witnesses.
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Dennis Lumby

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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.) 2 Sheets—Sheet 2.

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CORN PLANTER.

No. 481,852. Patented Aug. 30, 1892.

Fig. 2.

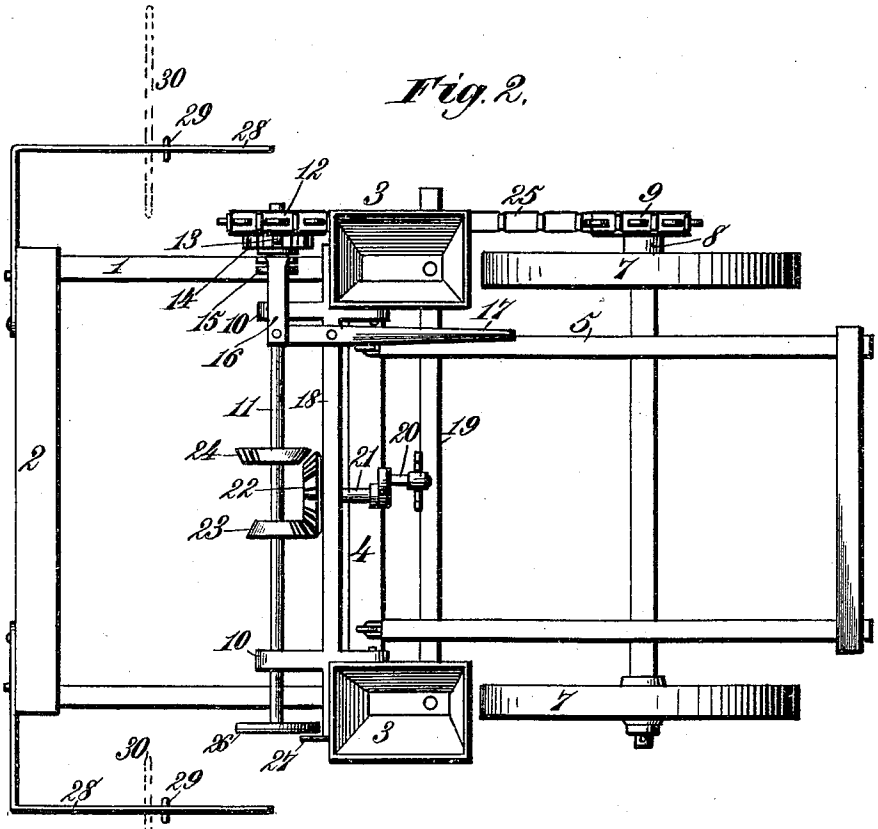


Fig. 3.

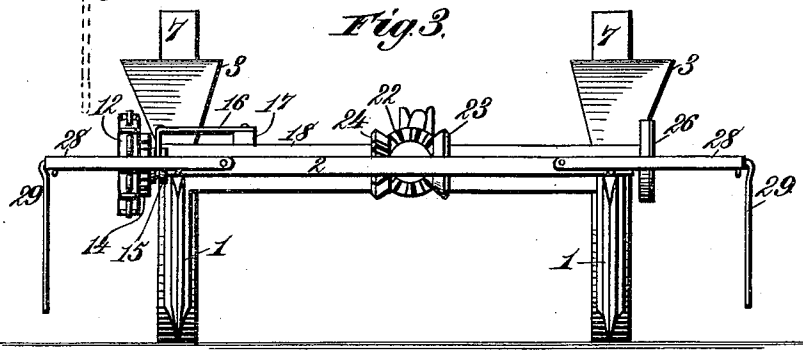
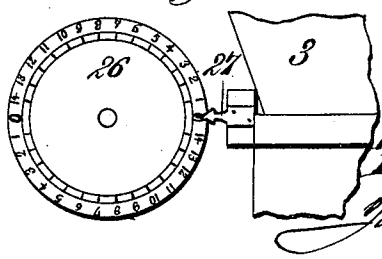


Fig. 4.



Witnesses.
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

HARVY H. DOUGHERTY, OF WAVERLY, ILLINOIS, ASSIGNOR OF ONE-HALF TO ALBERT F. BROWN, OF SAME PLACE.

CORN-PLANTER.

SPECIFICATION forming part of Letters Patent No. 481,852, dated August 30, 1892.

Application filed April 22, 1892. Serial No. 430,234. (No model.)

To all whom it may concern:

Be it known that I, HARVY H. DOUGHERTY, a citizen of the United States, residing at Waverly, in the county of Morgan and State of Illinois, have invented new and useful Improvements in Corn-Planters, of which the following is a specification.

My invention relates to corn-planters, and has for its object to provide novel, simple, and efficient mechanism for operating the corn-dropping devices and to regulate or control the dropping of the corn so that it will be planted in uniform rows.

To these ends my invention consists in the novel construction, combination, and arrangement of parts hereinafter described and claimed, reference being made to the accompanying drawings, in which—

Figure 1 is perspective view of a corn-planter embodying my invention. Fig. 2 is a top plan view. Fig. 3 is a front view. Fig. 4 is a partial side view showing the indicating-wheel and pointer.

In the said drawings the reference-numeral 1 designates the runners, connected at their front ends by a bar 2 and carrying at their rear ends the corn-boxes 3. Near their rear ends these runners 1 are firmly connected together and braced by a cross-beam 4, to which is suitably hinged or pivoted the ground-wheel frame 5 in such manner that the runners 1 and ground-wheel frame 5 have a free vertical movement with relation to each other to facilitate running over inequalities of the ground. These parts are of ordinary and well-known construction and need not be further described.

Journaled on the axle 6 in the frame 5 are the ground or drive wheels 7, the hub 8 of one of which wheels is extended outward sufficiently to clear the sides of the runners 1 and the corn-boxes 3, and suitably secured to said hub is a cog, sprocket, or other chain-engaging wheel 9.

Secured, preferably, to the forward ends of the corn-boxes 3 are brackets 10, in which is journaled a shaft 11, turning loosely, upon one end of which is a suitable cog, sprocket, or other chain-engaging wheel 12, extending inwardly from the face of which is a lateral tooth or pin. I have shown and prefer to use only one tooth or pin; but obviously a greater number could be used.

Secured to the shaft 11, adjacent to the wheel 12, movable into and out of engagement with the tooth 13, is a cog-wheel 14, having a lateral grooved extension 15, which is engaged by a forked arm 16, depending from a lever 17, pivoted to a cross-bar 18, supported by the brackets 10.

The numeral 19 indicates the corn-dropping slide, which works through the corn-boxes in the ordinary manner, dropping the corn on opposite sides of the machine, and extending upwardly therefrom is a forked arm which engages the horizontal member of a crank-arm 20, which may, if desired, be provided with a cushion-washer, as shown.

The vertical member of the crank-arm 20 is secured to a small horizontal shaft 21, journaled in the cross-bar 18 and carrying at its front end a bevel gear-wheel 22. Secured to the shaft 11, intermediate its length, are mutilated gear-wheels 23 and 24, each having, preferably, three teeth. These gear-wheels are so disposed upon the shaft 11 that the teeth of one wheel engage the gear-wheel 22 after the teeth of the other wheel have passed out of engagement therewith, whereby the bevel gear-wheel 22 is alternately rotated in opposite directions, thus imparting a reciprocating movement to the corn-dropping slide 19. A sprocket or other suitable chain 25 is trained over the wheels 9 and 12, imparting motion from the wheel 9 for operating the corn-dropping mechanism when the cog-wheel 14 is in engagement with the lateral tooth 13 on the wheel 12. When the lever 17 is moved in the proper direction, the cog-wheel moves away from the wheel 12, taking the corn-dropping mechanism out of operation.

The distance between the different hills or place where the corn is deposited is regulated by the relative size of the chain-engaging wheels 9 and 12, a wheel 12 of small diameter being used to impart a rapid reciprocation to the corn-dropping slide 19 when the hills are to be close together, and a wheel 12 of relatively-larger diameter to impart a slower reciprocation to the corn-dropping slide, according to the distance apart at which it is desired to have the hills. For instance, if it be de-

sired to have the corn drop, say, three feet nine inches apart, a six-inch wheel 9 and a six-inch wheel 12 would be employed, whereas to have the distance between the hills three feet six inches apart a six-inch wheel 9 and a five-inch wheel 12 would be adopted.

In order that the first hill in the field and the first hill in each successive row may be made at the required spot, I provide the following means: Upon the shaft 11 at the end opposite the chain-engaging wheel 12 is mounted an indicator-wheel 26, upon the face of which are two scales, the first beginning with zero at the top and extending half-way round the periphery of the wheel and the second beginning with zero at the base of the wheel and continuing around the periphery to the top. A suitable metallic or other pointer 27 is secured to the frame of the machine adjacent to the wheel 26, the end of which points to the scales on the face of said wheel. To the cross-piece 2, which connects the front ends of the runners 1, are secured pointer-rods 28, which extend outwardly from said cross-bar for a suitable distance and are then bent at right angles and extended back parallel with the sides of the machine. The parallel arms of said rods 28 are provided with a series of holes or perforations adapted to receive loosely the depending pin 29. The numeral 30 indicates a lay-out wire, which is constructed as shown in the drawings. The indicator-wheel 26 is so arranged on the shaft 11 that when the pointer is directed at zero on the scale on said wheel the corn-dropping slide is ready to commence its movements, so that if it is desired to have the corn-hills three feet nine inches apart and the pointer indicates zero the operator will know that the machine will travel three feet nine inches before the first corn is dropped.

The organization and operation of the machine for a three-foot-six-inch drop are as follows: A five-inch wheel 12 is placed upon the shaft 11 and is engaged with the wheel 9 by the chain 25. The cog-wheel 14 being out of engagement with the chain-engaging wheel 12, the indicator-wheel is turned until the pointer is directed at zero. The pin 29 is then inserted in one of the perforations of the pointer-rods 28 at a distance of twenty-one inches from the corn-shoe. The lay-out rod 30 is then placed at a distance of twenty-one inches in front of the corn-shoe or at the point where it will contact with the pin 29. The machine is then ready for operation and will travel the necessary distance before dropping the corn—viz., twenty-one inches in front of the lay-out rod 30. The cog-wheel 14 is then thrown into engagement with the lateral tooth of the wheel 12 and the machine is moved over the field the desired length of the row, the corn-slide dropping corn at each side of the machine. When the end of the row is reached, the corn-dropping mechanism is thrown out of operation and the lay-out rod is placed in the position indicated by the pin 29, depending from the pointer-rod 28, which would be twenty inches beyond the point where the last hill was deposited. The machine is now turned around and moved to the position where the pointer-rods engage the lay-out rod and the indicator-wheel is turned until the pointer is directed at zero. The machine is now ready to plant the second row. When the end of the second row is reached, the driver will be apprised of the fact by the pendent pin on the pointer-rod coming in contact with the previously-laid lay-out rod.

By my invention it is possible to plant the corn more accurately than is done by machines heretofore in use, and the distance between the hills of corn can be easily and accurately regulated.

My improved attachment may be applied to use with almost every discription of corn-planter now in use.

What I claim is—

1. In a corn-planter, the combination, with corn-boxes, a corn-dropping slide, and ground-wheels, one of which carries a chain-engaging wheel, of a transverse shaft provided at one end with a chain-engaging wheel, a chain trained over said chain-engaging wheels, a forked arm secured to the corn-dropping slide, a crank-arm, one member of which engages the fork of said forked arm and the other member of which is secured to a shaft carrying a gear-wheel, and gears on the transverse shaft meshing with said gear-wheel, substantially as described.

2. In a corn-planter, the combination, with corn-boxes, a corn-dropping slide, and ground-wheels, one of which carries a chain-engaging wheel, of a transverse shaft provided at one end with a chain-engaging wheel, a chain trained over said chain-engaging wheels, a forked arm secured to the corn-dropping slide, a crank-arm, one member of which engages the fork of said forked arm and the other member of which is secured to a shaft carrying a gear-wheel, and mutilated gears on said transverse shaft alternately meshing with said gear-wheel to reciprocate the seed-dropping slide, substantially as described.

3. In a corn-planter, the combination, with corn-boxes, a corn-dropping slide, and ground-wheels, one of which carries a chain-engaging wheel, of a transverse shaft, a chain-engaging wheel 12, having a lateral tooth or pin turning loosely on one end of said shaft, a chain trained over said chain-engaging wheels, a forked arm secured to the corn-dropping slide, a crank-arm, one member of which is secured to a shaft carrying a gear-wheel, mutilated gears on said transverse shaft alternately meshing with said gear-wheel, a cog-wheel on the transverse shaft, and a lever for throwing the same into and out of engagement with the lateral tooth or pin on the chain-engaging wheel 12, substantially as described.

4. In a corn-planter, the combination, with the runners, corn-boxes, and corn-dropping

mechanism, of pointer-arms 28, secured to the runners and extending rearward, the pins 29, suspended from and adjustable along the pointer-arms, the laying-out wires 30, and an indicator-wheel in operative connection with the corn-dropping mechanism, substantially as described.

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

HARVY H. DOUGHERTY.

Witnesses:
C. A. ROOT,
O. R. ROHRER