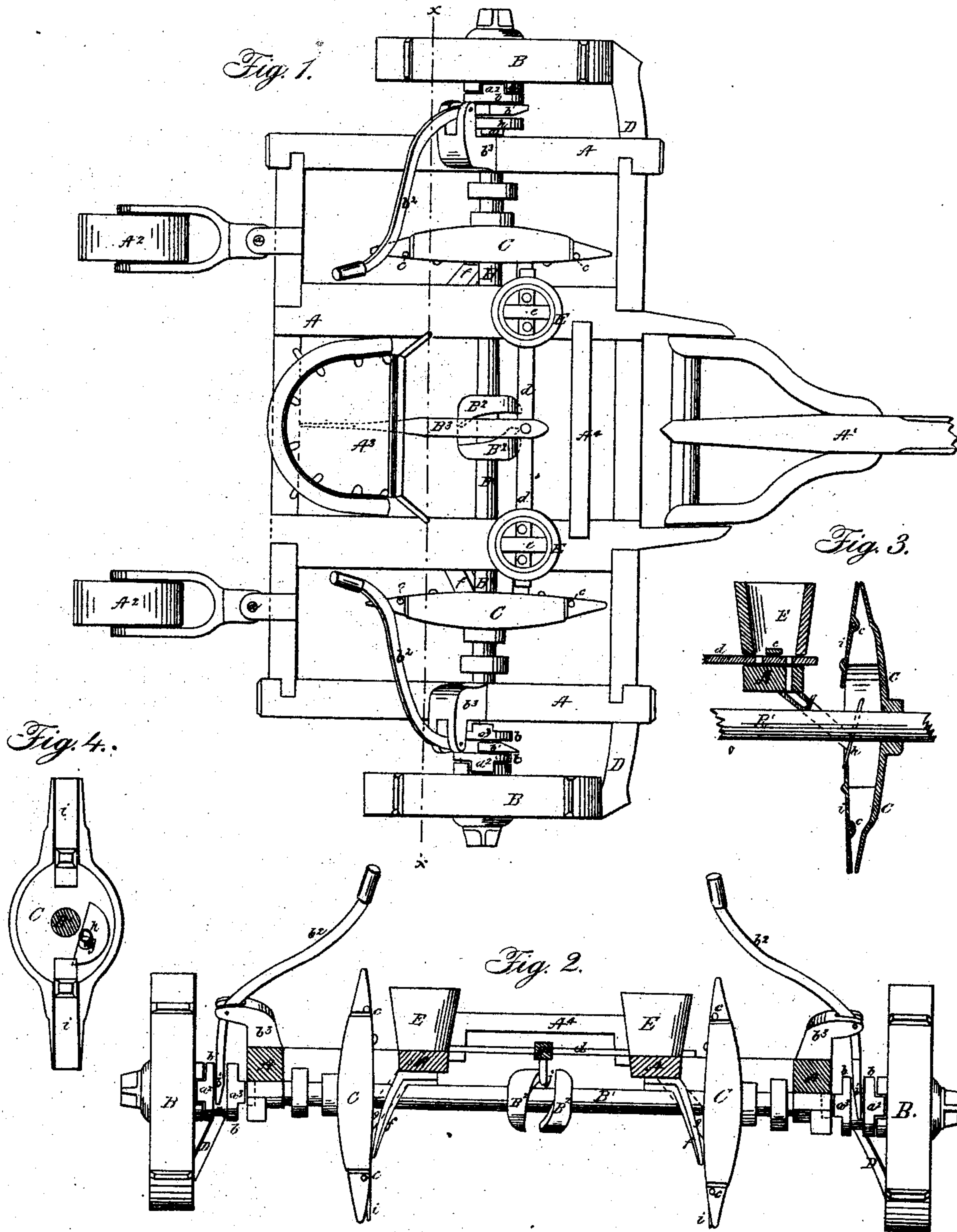


L. STUDY. Corn Planter

No. 69,862.

Patented Oct. 15, 1867.



Witnesses:

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LEONARD STUDY, OF PLUM HOLLOW, IOWA.

Letters Patent No. 69,862, dated October 15, 1867.

IMPROVEMENT IN CORN-PLANTERS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, LEONARD STUDY, of Plum Hollow, in the county of Fremont, and State of Iowa, have invented a new and improved Corn-Planting Machine; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a top view of my improved machine complete.

Figure 2 is a transverse section, taken through the machine in the vertical plane indicated by red line xx in fig. 1.

Figure 3 is a vertical section in detail of the hopper and seed-dropping device of one side of the machine.

Figure 4 is an inside view of one of the seed-droppers.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to certain novel improvements of that class of corn-planters wherein the corn-dropping devices are mounted upon a carriage, so as to distribute at two points simultaneously as the machine is drawn over the field.

The nature of my invention consists in providing for measuring or laying out the distance between the hills of corn uniformly, by the application to the axle of the transporting-wheels of seed-droppers, which revolve with said axle and drop the corn at the desired points, by the action of cams upon valves, which are applied to the ends of said droppers, as will be hereinafter described.

The invention further consists in the application of clutches, and means for operating them, to the axle of the transporting-wheels, so that the person riding upon the machine can cause either one or both of said wheels to turn its axle, or to turn loosely upon the axle, in combination with seed-dropping devices, which are applied directly to and which revolve with said axle, as will be hereinafter described.

The invention further consists in communicating motion to the seed-slides from the axle of the transporting-wheels, in a seeding machine having its dropping devices applied directly to said axle, so that the delivery of the seed into the droppers, and the action of these latter, shall be automatic and regular, as will be hereinafter described.

To enable others skilled in the art to understand my invention, I will describe its construction and operation.

In the accompanying drawings A represents a rectangular carriage-frame, composed of longitudinal and transverse beams, suitably secured together, and adapted to form a support for the driver's seat A^3 and the corn-dropping devices. This frame A is mounted upon an axle, B^1 , which is allowed to rotate freely in its bearing-boxes, and which has two driving and transporting-wheels B B applied loosely upon its ends. Between the notched hubs of the transporting-wheels B B and the longitudinal side beams of frame A clutches are applied upon the axle B^1 , so as to turn with it, and so as to have endwise play. These clutches are moved by the driver, sitting upon his seat A^3 , by means of curved levers b^2 , which are pivoted to standards b^1 upon frame A, and which are constructed with yokes b^1 upon their ends that embrace the annular grooves in the clutch-hubs b b, as shown in figs. 1 and 2. The outer ends of said clutches have tenons a^2 formed on them for entering corresponding recesses formed in the hubs of the wheels B B, and thus causing the wheels and axle to rotate together. The tenons a^2 , on the inner ends of the clutches, enter recesses made in frame A and prevent the axle B^1 from rotating, when one or both of the wheels B B are allowed to turn freely around it. By thus providing for securing the axle to one or both wheels at the pleasure of the driver, and of securing the axle to the frame A, when one of its wheels or both wheels are free to rotate around it, I accomplish two objects, viz, when the driver desires to transport the machine from one place to another, he can do so, without turning the axle B^1 , by simply disconnecting the clutches from their wheels and connecting the clutches with their frame A, as described; and when the driver desires to turn the machine at the ends of each row of corn planted, he can do so, without dropping corn, by locking one wheel B to its axle and unlocking the opposite wheel, and then locking the axle, by the clutch of the latter wheel, to the frame A, thereby using one wheel as the pivot upon which to turn the machine so as to commence another row.

In front of the driver's seat is the transverse reciprocating seed-slide d . In front of this slide is a foot-rest, A^4 , for the driver, and in front of this rest is the draught-pole A^1 , which is pivoted to hounds projecting from

the front beam of the frame A, as shown in fig. 1. The seed-slide *d* is allowed to have a free endwise movement through the bottoms of two seed-hoppers E E, placed equidistant from the centre of the frame A, which motion is imparted to it by a cam, B², in a groove of which a pin, *j*, plays, which pin projects down from a spring, B³. The cam B² is secured to the axle B¹ so as to turn with it, and the spring B³ is used for keeping the slide, to which it is pivoted, in a proper position when not directly acted upon by the cam. One portion of the cam B² moves the slide *d* in one direction and drops the corn from both of the hoppers, after which the spring B³ returns said slide to a position for being acted upon by the opposite portion of the cam B², for dropping the corn from both of the hoppers in like manner. The hoppers E E are supported upon two longitudinal beams of frame A, through which holes are made leading from the hoppers to inclined seed-tubes *g g*. Above the slide *d* cut-offs *e e* are applied in the hoppers for regulating the discharge of corn from these hoppers, as shown in figs. 1 and 3. The tubes *g g* lead downward and outward, in front of axle B¹, into annular chambers, which are formed in the dropping-devices C C, which chambers are concentric to the axis of the axle to which said devices are secured. Each one of the droppers C has two arms, which taper to points like wedges, and these arms are grooved or channelled, as shown in figs. 3 and 4, in which channels valves *i* are applied by means of pivots C C. By this arrangement two conduits, diametrically opposite each other, lead from the chamber of each dropper, for the purpose of receiving grains of corn from the seed-tubes *g*, and depositing these grains into the ground at proper points.

The seed-tubes *g g* terminate in the annular chambers of their droppers, in oblique flanges or cams *h*, the object of which is to act upon those ends of valves *i i* nearest the axle B, and close the lower or outer ends of the channels leading from said chambers. These flanges or cams *h h* keep the outer ends of valves *i i* closed until the seed is dropped into their channels, and until these channels are brought around to a position for depositing the seed into the earth, when the valves are released from their cams *h*, but immediately acted upon by the valve-openers *f f*, which proceed down from frame A in rear of the axle B¹. It will be seen that the grains of corn are delivered into the channels of the droppers before these channels are brought to a vertical position beneath the axle, consequently, when the valves are opened by the arms *f*, the grains will be instantly deposited into the soil, after which they will be pressed down by the rollers A², which are pivoted, at *a a*, to the rear cross-beam of frame A.

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

1. The application directly to the axle B¹, of seed-droppers C, which are provided with valves *i*, in combination with cams *h*, upon the seed-tubes *g*, and openers *f*, upon the main frame, substantially as and for the purposes described.
2. The chambered and radially-grooved dropping-devices C C, provided with valves *e e*, and adapted for the purpose substantially as described.
3. The combination of a seed-slide, *d*, which is moved by axle B¹, through the medium of spring B³, the seed-hoppers E, the seed-tubes *g*, and the rotating droppers C, constructed to operate substantially as described.
4. The double-acting clutches *b*, applied on the axle B¹ in such manner as to lock this axle to its frame, when the driving-wheels B, one or both, are free to turn around said axle, substantially in the manner and for the purposes described.

LEONARD STUDY.

Witnesses:

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