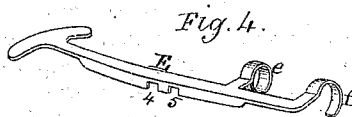
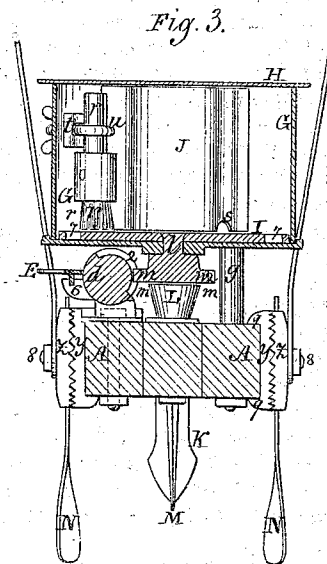
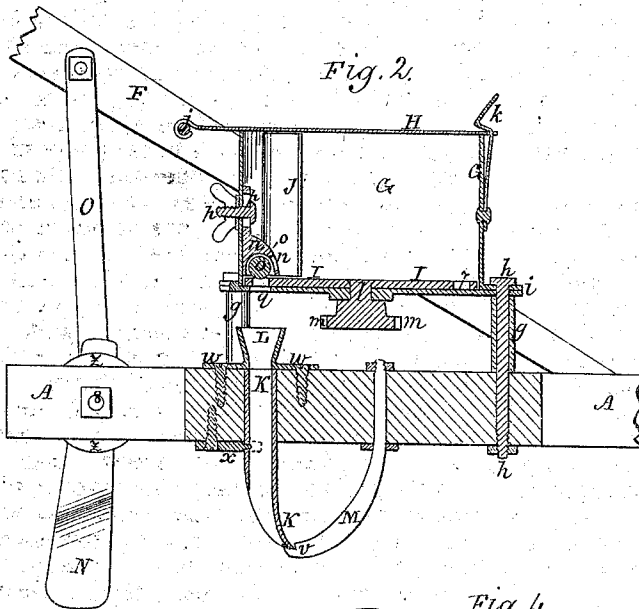
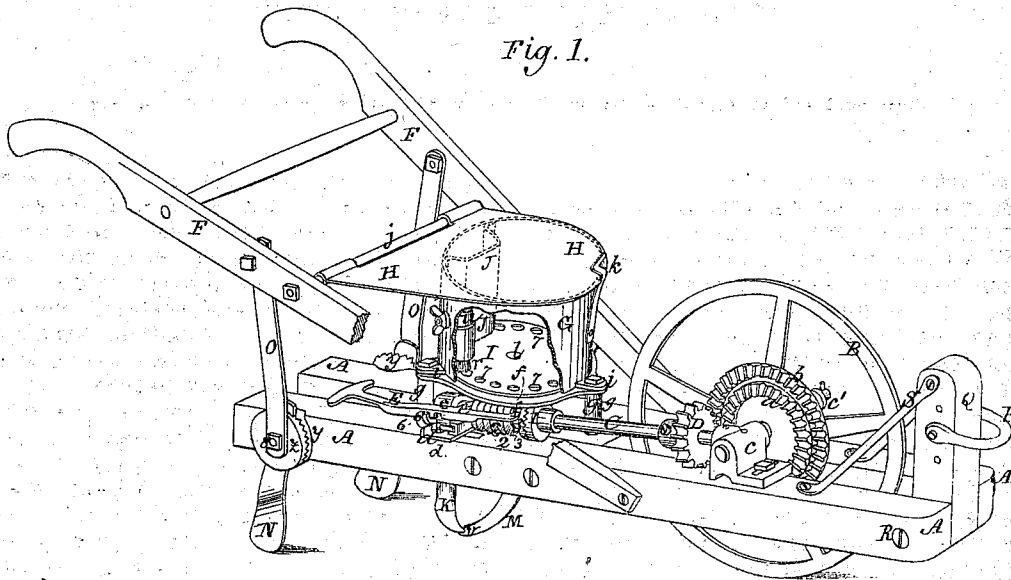


J. INGELS & W. R. MOUNT.

Corn-Planters.

No. 135,813.

Patented Feb. 11, 1873.



Witnesses.

D. R. Row
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Inventors.

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By their atty. A. B. Stoughton.

UNITED STATES PATENT OFFICE.

JOSEPH INGELS AND WILLIAM R. MOUNT, OF MILTON, INDIANA, ASSIGNORS
TO "HOOSIER DRILL COMPANY," OF SAME PLACE.

IMPROVEMENT IN CORN-PLANTERS.

Specification forming part of Letters Patent No. 135,813, dated February 11, 1873.

To all whom it may concern:

Be it known that we, JOSEPH INGELS and WILLIAM R. MOUNT, of Milton, in the county of Wayne and State of Indiana, have invented certain new and useful Improvements in Machines for Drilling Corn; and we do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing making a part of this specification, in which—

Figure 1 represents the machine in perspective, with a portion of the hopper broken away so as to see the interior thereof. Fig. 2 represents, on an enlarged scale, a vertical section taken through the hopper in the line of the length of the machine and through the parts in proximity thereto. Fig. 3 represents, on a similar scale, a vertical transverse section through the hopper and the parts underneath it. Fig. 4 represents, detached from the machine, the shipper-lever for putting the seed-dropping mechanism in or out of action, as the case may be.

Similar letters of reference, where they occur in the separate figures, denote like parts of the machine in the drawing.

The object and purpose of this machine are to deliver regular and uniform charges of corn from a hopper into a furrow turned or opened by the machine as it advances, and then covering up the corn so drilled or dropped; and the invention relates to the particular manner of constructing and operating the several mechanisms, by which such a machine may be changed and adapted to such varied circumstances as present themselves in drilling in corn, and adjusting the machine to change the charges or quantities of grain so to be drilled in.

To enable others skilled in the art to make and use our invention, we will proceed to describe the same with reference to the drawing.

The main frame A is supported near its front end by a carrying and driving wheel, B, that has two or more bevel-gears, *a b*, on one of its faces, and which is hung in adjustable bearings *c c'* for the purpose of adapting the machine to faster or slower dropping or drilling. The adjustable bearing or box *c* also supports the front end of a driving-shaft, C, which extends thence rearward, and is supported at

its rear end in an adjustable box or bearing, *d*, said bearings being on the main frame. On the shaft C, near its front end, there is a bevel-pinion, D, which can be set forward or back on said shaft, and, when so set, held firmly by a set-screw or otherwise, so that said pinion may be arranged to mesh with either of the bevel-gears *a b* on the driving-wheel, as the case may be. On the after portion of the shaft C there is fastened a half-clutch, 1; and in rear of this half-clutch there is a sliding sleeve or boss, 2, with a worm-gear formed upon it; and on the front of the worm-gear boss or sleeve there is a semi-clutch, 3, which, when moved forward, unites with the semi-clutch 1 so as to cause the worm-gear to turn with said shaft—as, for instance, when the machine is drilling in the corn. A lever, E, (more distinctly seen at Fig. 4,) with an eye, *e*, for receiving the shaft C and being guided thereon, and a loop, *f*, for passing around a neck on the worm-gear, and notches 4 5 for holding it in certain positions, is arranged so that the operator, walking between the handles F, may readily operate it to move the worm-gear into or out of action with the shaft C. Connected to or with the box or bearing *d* there is a stud or keeper, 6, which takes into the notches 4 or 5 of the lever E to hold it when properly placed. The hopper G is of cylindrical form, and is set upon hollow posts *g*, and secured thereto and to the main frame by bolts *h* passing through lugs or ears *i* on the hopper and its bottom plate, and through said hollow posts, and through the main frame. The cover H of the hopper is hinged to a brace-rod, *j*, that unites and braces the handles F, and a spring-catch, *k*, on the hopper takes into a recess in the cover to hold it when shut down. Inside of the hopper G, and on the bottom thereof, there is a plate, I, furnished at its perimeter with a series of cells, 7 7 7, capable of receiving and carrying a certain number of grains of corn. The axis *l* of this plate I extends through the bottom of the hopper, and has upon it, beneath the hopper, a gear, *m*, into which the worm-gear takes, and thus rotates said plate I in the hopper. Within the hopper there is a vertical wall or partition, J, which forms a chamber open at top and bottom; and said wall or partition extends downward far enough to allow

the plate I to snugly pass under it. In the chamber, inside of the hopper formed by the wall or partition J, there is a cage, *n*, in which there is a ball or marble, *o*, said cage being made adjustable by a slot, set-screw, and thumb-nut, as seen at *p*. This ball or marble turns around in the cage as the grains of corn in the series of cells 7, which revolve immediately under it, come against it, and thus jars or settles the grains out of said cells, and into and through the opening *q*, Fig. 2, in the bottom of the hopper, whence it drops into and through the tubular shoe K into the furrow opened for it. In close proximity to the wall or partition J, but outside of it, there is a brush, *r*, for sweeping off or keeping back any grains that may project above the tops of the cells; but should any such projecting grains pass the brush they can pass the wall or partition, as a slight opening is made for such purpose, and the ball or marble will jar them through the openings into the tubular shoe; and should the ball or marble fail to work the grains out of the cell, they can pass again into the hopper through another opening, *s*, in the wall, and thus no broken grains are drilled through. The brush rests against a saddle, *t*, and is held thereto and made adjustable in an eyebolt, *u*, the screw-shank of which passes through the hopper, and has a thumb-nut run over it, by which the stem or handle of the brush, when adjusted in the eye of the bolt, is held.

When the grain drops through the bottom of the hopper, it falls first into a small hopper, L, set on the main frame, and thence it passes into and through the tubular shoe K into the furrow formed for it. In advance of the shoe or hoe K there is a colter, M, the top of which is fastened to the main frame, and which extends downward and rearward in a curved line until it meets the point of the shoe or hoe K, and is there notched or recessed, as at *r*, to receive, brace, and protect the point of said shoe or hoe. The small hopper L has flanges or lugs *w* upon it, by which it is secured to the main frame, and the shoe or hoe K is secured and prevented from turning in the main frame by a stay-plate, *x*, which has a point or pin upon it that passes into a hole in the shoe or hoe, as seen in Fig. 2.

The coverers N N, for turning the soil over onto the dropped or drilled corn, are held and made adjustable between two serrated plates, *y z*, that are held to the sides of the main frame by through-bolts 8, and the same through-bolts hold the lower ends of the braces *o o* that brace the handles F to the main frame. Of these pairs of serrated plates the one, *y*, next the main frame has top and bottom lugs 9, by which it is held to, and prevented from turning on, said main frame or the bolt, and the outer one, *z*, of the pairs has a recess in its face, in which the shank of the coverer N may lie, and when the teeth or serrations in these

plates are drawn together by their bolts they rigidly hold the coverers. The clevis P, by which the drill is drawn, is attached to a clevis-post, Q, that is bolted to the main frame at R, and braced thereto by braces S. The box or bearing marked *d* is composed of and made adjustable by a flanged under plate resting upon the main frame, and a flanged and recessed journal-box resting upon said under plate, and a headed screw-bolt, which takes over the flanges of the journal box or bearing, passes through the under plate and through a fore-and-aft slot through the main frame, so that the entire box or bearing may be moved forward or back on the main frame, and the journal portion moved laterally independent thereof.

The construction of the worm and half-clutch in one piece and the moving of them together on the shaft C by the lever E admit of stopping or starting the dial or cell plate I in the hopper without engaging or disengaging the worm 2 and the plate-driving gear *m*; or, in other words, the worm 2 and gear *m* can always remain in gear or contact, and the plate I stopped or started while they are so in gear, by simply sliding the compound worm and semi-clutch on the shaft C.

The openings *s* where the series of cells pass out from under the wall or partition J may be larger than the corresponding opening where said series pass in under said wall, so that any grains that may happen to be in the chamber formed by said wall or partition and beyond the dropping point may fall into the empty cells and be carried out into the hopper or around to the dropping point again.

Having thus fully described our invention, what we claim is—

1. In combination with the shaft *c* and its half-clutch fastened thereon, the combined half-clutch and worm 12 and clutch-lever E for moving said clutch and worm longitudinally on the shaft *c*, as and for the purpose described and represented.

2. The combination of the worm 2 that is always in gear with its pinion, the shaft C, gear *m*, and adjustable box or bearing *d*, so that the worm and gear may always remain in contact, and any wear compensated for by moving the worm and shaft up to the gear *m* without disarranging its other duties, substantially as described.

3. In combination with the dial or cell plate I, the chamber J in the hopper and the cage and ball arranged to operate inside of said chamber, and in connection with said dial-plate, for knocking or jarring the grains out of the cells at or over the dropping point, substantially as described.

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Witnesses:

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