

J. CASE.

CORN PLANTING MACHINE.

No. 263,318.

Patented Aug. 29, 1882.

Fig. 1.

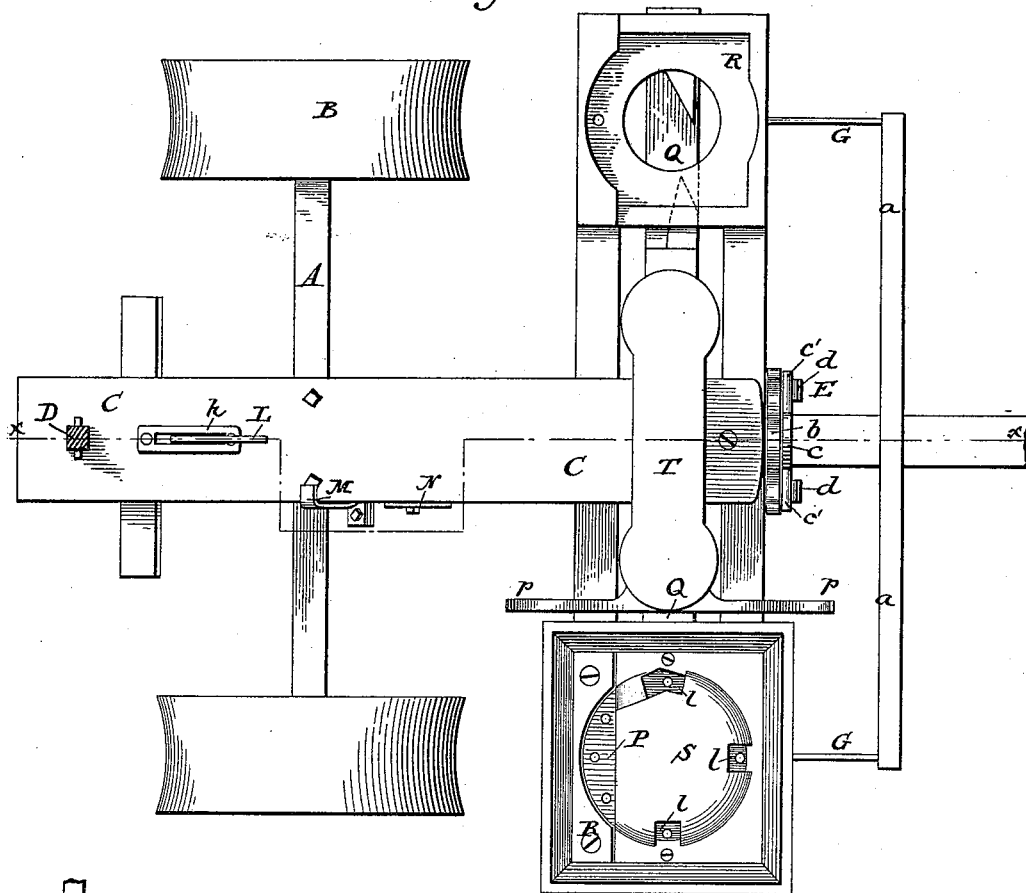
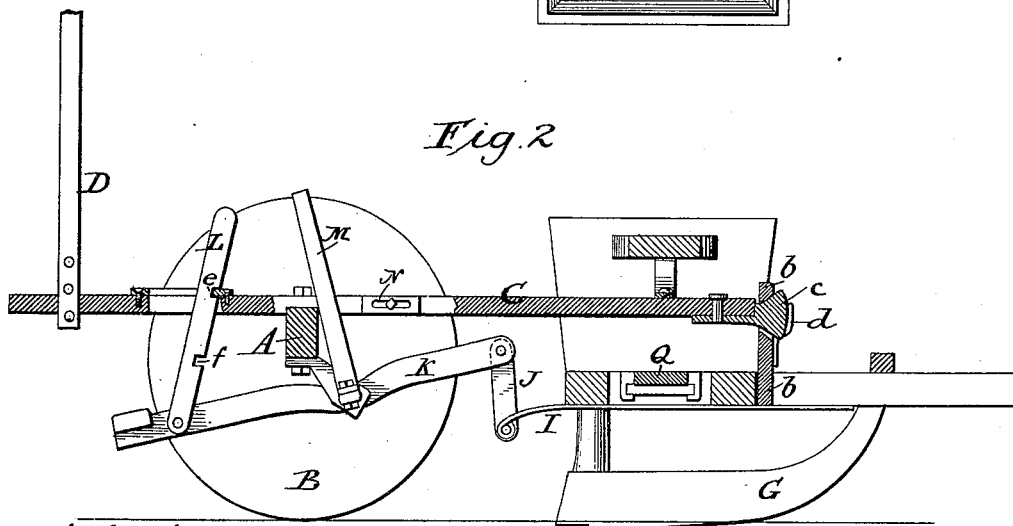


Fig. 2



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(Model.)

2 Sheets—Sheet 2.

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Fig. 3.

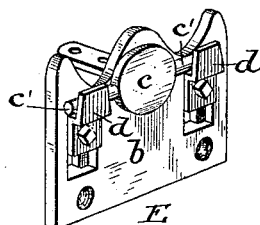


Fig. 4.

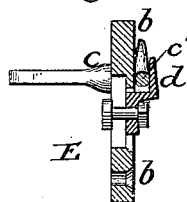


Fig. 5.

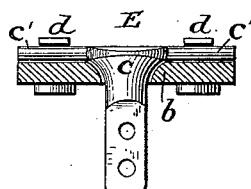


Fig. 6.

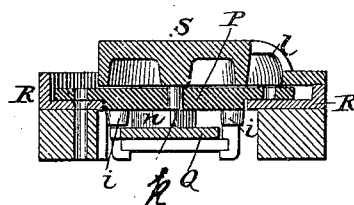


Fig. 7.

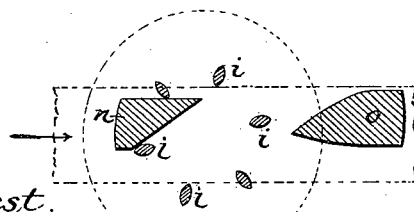
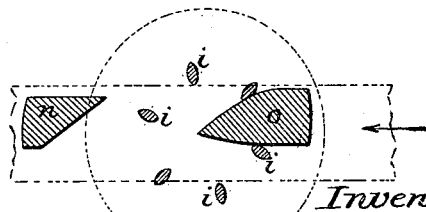


Fig. 8.



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UNITED STATES PATENT OFFICE.

JARVIS CASE, OF TROY, OHIO.

CORN-PLANTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 263,318, dated August 29, 1882.

Application filed May 13, 1882. (Model.)

To all whom it may concern:

Be it known that I, JARVIS CASE, of Troy, in the county of Miami and State of Ohio, have invented certain Improvements in Corn-Planters, of which the following is a specification.

This invention relates to that class of double-row corn-planters in which furrow-opening runners provided with seed-hoppers and dropping mechanism are jointed to the forward end of a wheeled frame which is provided with a driver's seat and appliances for controlling the position and movement of the runner-frame.

The invention consists in an improved jointed connection between the runner-frame and the main frame for the purpose of permitting the former to rock or tip vertically in both directions, as required in practice; in a peculiar arrangement of levers and rocking devices for raising and lowering the rear end of the runner-frame in a positive manner and securing it in the required position; in mounting the rotary dropper-plate on a stud or journal formed on the under side of the covering-plate, whereby a free and unobstructed space is left beneath the dropper-plate for the operation of the slide.

Referring to the accompanying drawings, Figure 1 represents a top plan view of the machine, the rotary dropper-plate and its covering-plate being removed on the left side of the machine to expose the parts located thereunder. Fig. 2 is a longitudinal vertical section of the same on the line *x x*. Fig. 3 is a perspective view, showing the jointed connection between the two arms. Fig. 4 is a vertical section on the line *y y*, Fig. 3. Fig. 5 is a horizontal section. Fig. 6 is a vertical section on the line *z z*, showing the construction of the dropping devices. Figs. 7 and 8 are top plan views, illustrating the devices for imparting an intermittent rotary motion to the dropper, the plate and slide being indicated in dotted lines, while their co-operating lugs and teeth are shown in full lines.

Referring to the drawings, A represents the main axle of the machine, sustained at its two ends by ground-wheels B. To the middle of the axle there is secured transversely a horizontal frame or timber, C, the rear end of which is provided, as usual, with a driver's

seat, D, while its forward end is connected by means of a coupling-joint, E, to the runner-frame. The runner-frame, which is constructed in the ordinary or substantially the ordinary manner, consists essentially of two parallel runners, G, of the form in common use in this class of machines, connected at their forward and rear ends by means of transverse bars or timbers *a*, bolted rigidly to them, whereby the two runners are held in a fixed relation to each other.

As the runners and the runner-frame are of ordinary construction and familiar to all persons skilled in the art, a detailed description thereof is deemed unnecessary herein.

The joint by which the runner-frame is connected to the beam C of the main frame consists essentially of a vertical plate or casting, *b*, bolted firmly to the runner-frame, and of a horizontal neck or casting, *c*, bolted to the under side of the beam C, and extended horizontally through a slot or opening in the plate *b*, as clearly represented in Figs. 1, 3, 4, and 5. The neck *c* is made of cylindrical form, in order to permit the runner-frame to rock vertically thereon, and is provided at its forward end, as shown, with an enlarged head or plate to prevent the parts from separating. As shown in the drawings, the parts are so rounded on their adjacent faces as to permit the runner-frame to tip both laterally and in a forward and backward direction.

In order to prevent the runner-frame from swinging horizontally, the member *c* is provided with two horizontal arms, *c'*, extended in opposite directions therefrom, and the plate *b*, provided with vertical arms *d*, which are bolted securely thereto and arranged to engage over the arms *c'* in the manner represented in the drawings. The arms *c'* are free to play or rock vertically between the arms *d* and the plate *b* as the runner-frame rocks or swivels around the neck *c*; but at the same time they prevent the runner-frame from swinging horizontally in relation to the wheeled frame. The arms *d* may be cast upon the plate *b* or bolted thereto, as shown, and they may be varied in form, as desired, provided only that they engage over the arms *c'* and permit the latter to move vertically. The essential feature of the joint con-

sists in so constructing its parts as to permit the runner-frame to rock both forward, backward, and sidewise, but prevent a horizontal motion.

As a means of controlling the position of the runner-frame with respect to the main frame, the former is provided with a rigid backwardly-extending arm or bar, I, connected by a link, J, to the forward end of a horizontal lever, K, which is pivoted in sustaining-arms upon the side of the main axle. The rear end of the lever K is located in a suitable position to be depressed by the feet of the driver, and is provided with a cross-bar or foot-piece, upon which the driver may rest his feet. Near its rear end the lever is provided with an upright bar or link, L, extending upward through a slot in the beam C, and provided in its forward edge with notches or shoulders *e* and *f* at different heights to engage with the locking-plate *h*, secured upon the beam. By means of the notched bar or link L the rear end of the lever K may be locked in its lowermost position, so as to hold the rear end of the runner-frame in an elevated position, or the lever locked in an elevated position, so as to hold the rear end of the runner-frame and the heels of the runner downward.

In order that the driver may positively operate the lever K to depress the heel of the runner-frame an upright foot-lever, M, is attached rigidly to the lever K, as shown in Figs. 1 and 2, the upper end of this lever being arranged in such position that it may be readily pushed forward by the foot of the attendant, who may also lock and unlock the link L by means of the foot.

For the purpose of gaging the depth to which the heels of the runners are depressed, I secure upon the beam C a stop-plate, N, to limit the forward motion of the lever M. This plate will be slotted and secured in place by a bolt, as shown, or otherwise secured in such manner that it may be readily adjusted forward and backward.

It will be perceived that by the above-described arrangement of parts the driver is enabled to raise and lower the heels of the runners in a positive manner by means of his feet, and that by the action of his feet the runners may be locked rigidly in an elevated or depressed position, as circumstances may require.

Referring next to the dropping mechanism, by means of which the seed is delivered intermittently from the hoppers through the heels of the runners into the furrow, it will be seen to consist, as usual, of a horizontal intermittently-rotating perforated plate, P, located in the bottom of each hopper and operated by means of the reciprocating bar Q. Each plate P is seated upon a supporting-plate, and is provided on the under side with a circular series of teeth, *i*, which are acted upon by inclined faces or cams formed upon the upper side of the reciprocating bar Q, in such manner that at each movement of the bar a slight rotation is

imparted to the plate, so that the holes in the plate, filled by the seed from above, are brought successively over the discharge-opening in the runner, as usual.

Instead of mounting the rotary plate P upon a stud or pivot sustained below it, as usual, it is mounted upon a journal, *k*, extending downward from a covering-plate, S, as clearly shown in Fig. 6. This covering-plate, which serves to sustain the superincumbent mass of corn and relieve the rotary plate from the weight thereof, is provided, as shown in Figs. 1 and 6, at different points with a number of openings, Z, through which the corn may pass into the cells or openings in the dropper-plate. The covering-plate S extends beyond the periphery of the dropper-plate, and is sustained at its edges upon the base-plate or frame R, as clearly represented in the drawings.

Passing next to the means for turning and locking the rotary disks, it will be found to consist simply of peculiar rigid studs carried by the reciprocating slide and acting on teeth on the under side of the disk. As shown in Figs. 7 and 8, each disk has six studs, *i*, disposed around the center in a circular line at equal distances apart. The slide has on its end a plate provided with two studs or ribs, *n* and *o*, located at a short distance apart, and tapered from their outer to their inner ends. These studs are shaped and arranged in relation to each other and to the studs so that as the slide moves to and fro they engage alternately with the studs at opposite sides of the plate. When the slide moves to the right the stud *n*, acting with its inclined side against one of the teeth, urges the plate around until the next tooth is brought against the opposite edge of the stud, as shown in Fig. 7, whereupon the plate is stopped and held by the stud wedging between the two teeth. During this movement the stud *o* recedes from the teeth, but on moving the slide in the opposite direction to the left the stud *n* recedes and the stud *o* advances, and, acting against one of the teeth, turns the plate forward until the next tooth encounters its opposite edge, when the plate is again stopped and held. In this manner the plate is rotated intermittently in one direction, being advanced by each movement of the slide and stopped, after moving the proper distance, in a positive manner.

While the drawings illustrate six teeth on the plate, it is manifest that the number may be increased or diminished, provided the inclined or wedge-shaped studs *n* and *o* are modified to correspond.

As regards the studs, the only essential requirement is that their sides or edges shall be inclined to push the teeth forward, and that each stud shall leave the plate in such position as to present a tooth in the required relation to the other stud.

The slide will be operated ordinarily by a boy riding on the front of the machine and operating a hand-lever, as usual.

Instead of placing the dropper's seat on the runners, as usual, I mount it, as shown at T, on the forward end of the main frame on the beam to which the runners are hinged. In this way the dropper's weight is applied to the runners at the center, and the shifting of the weight upon the seat prevented from applying an unequal pressure to the two runners, as happens when the seat is carried by the runner-frame. I sustain the seat on the frame, as shown, by a standard or bracket or other suitable connection, and to one end of the seat secure depending foot-rests *p*, which enable the dropper to ride easily without placing his feet on the runners.

The right is reserved to make all other features which are described and shown herein, but which are not specifically claimed, the subject-matter of a separate application.

Having thus described my invention, what I claim is—

1. In a corn-planter, the combination of the wheeled frame and the runner-frame, the jointed connection consisting of the vertical plate, and the neck or journal extending horizontally through the same, the said parts constructed substantially as described, to permit the runner-frame to move vertically in both directions, but prevent its horizontal motion.

2. The coupling for a flexible-frame planter, consisting of the horizontal neck or journal, provided with a head and with the laterally-extending arms, and the vertical plate *b*, perforated to admit said neck, and provided with the vertical arms or guides *d*.

3. In a coupling for a jointed planter-frame, a horizontal neck or journal extended through

a vertical plate, and provided with horizontal arms or journals seated in vertical guides in said plate, substantially as shown.

4. In a corn-planter, the combination of the wheeled main frame, the forward runner-frame jointed thereto, the foot-lever mounted upon the main frame and connected at its forward end by the link with the runner-frame, and the notched link or locking device attached to the rear end of the foot-lever and engaging with the main frame, as shown.

5. The wheeled frame and runner-frame jointed together, substantially as shown, in combination with the foot-lever K and the upright foot-lever M, constructed and arranged to operate substantially as described and shown.

6. The main frame and runner-frame jointed together, in combination with the foot-levers K and M, as described, and the adjustable stop N, whereby the movement of said levers and the position of the runners may be determined.

7. In a corn-planter, the combination, with the rotary dropper-plate, of the covering-plate S, provided on its under side with the journal for the dropper-plate, substantially as described, whereby an unobstructed space is left beneath the dropper-plate for the passage of the operating-slide.

8. In combination with the runner-frame and dropping mechanism thereon, the wheeled frame jointed thereto, and the dropper's seat and foot-rest sustained by the wheeled frame.

JARVIS CASE.

Witnesses:

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G. H. SELLERS.