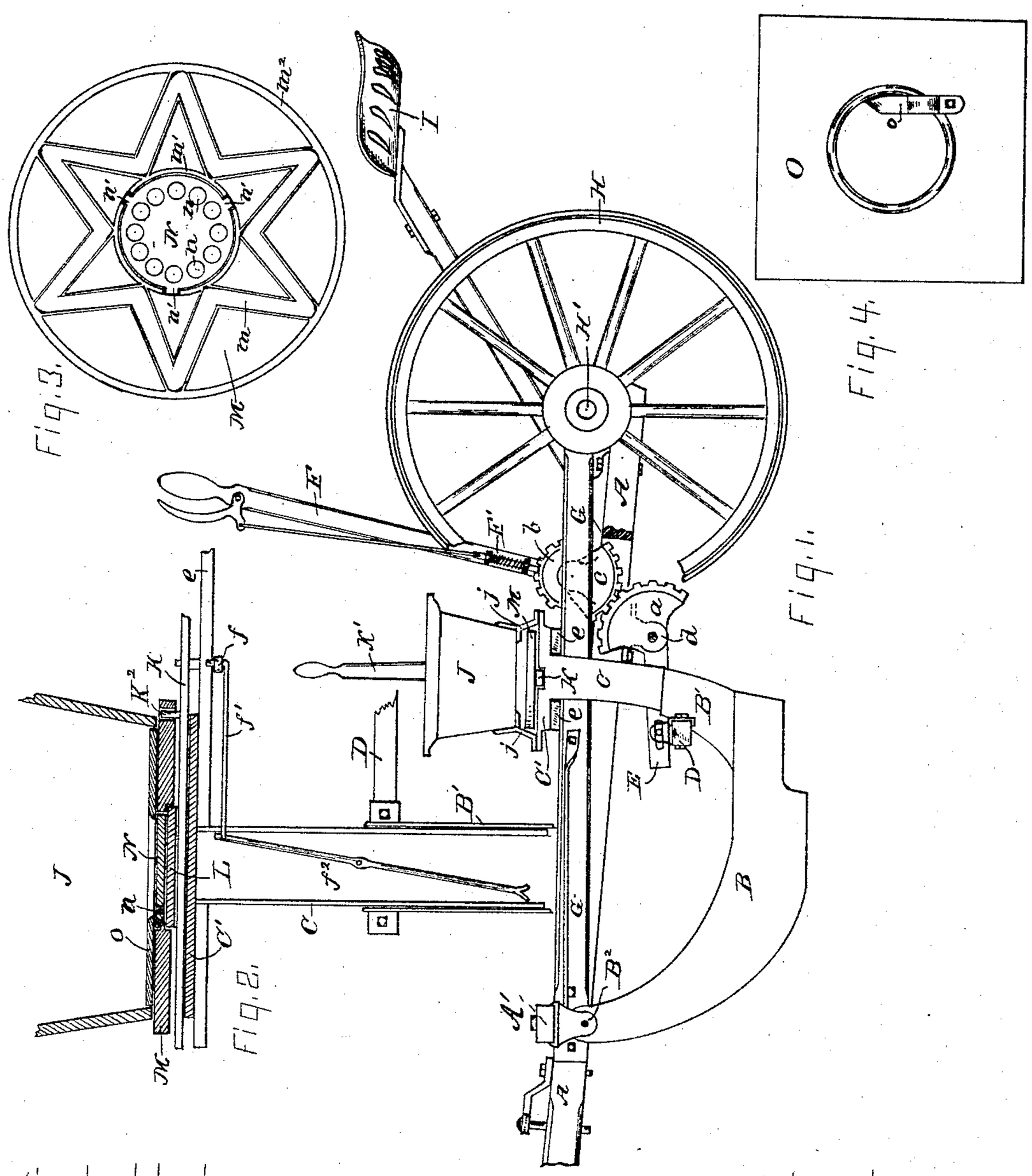
(No Model.)

W. H. KADEL.

CORN PLANTER.

No. 328,036. Patented Oct. 13, 1885.



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UNITED STATES PATENT OFFICE.

WILLIAM H. KADEL, OF ROCK FALLS, ILLINOIS.

CORN-PLANTER.

SPECIFICATION forming part of Letters Patent No. 328,036, dated October 13, 1885.

Application filed June 1, 1885. Serial No. 167,192. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. KADEL, a citizen of the United States, residing at Rock Falls, in the county of Whiteside and State of Illinois, have invented certain new and useful Improvements in Corn-Planters; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

My invention pertains to two-row corn-planters; and it consists, first, in novel mechanism for regulating the depth of the planting, and, second, in an improved mode of operating the measuring or seed cups in the bottom of the seed-hoppers.

As the general conformation of the machine and the relative position of its parts are not unlike those usually employed, I do not deem it necessary to show or describe the machine further than to make clear the construction, operation, and mode of attachment of those parts which I herein claim to be my invention.

In the drawings, Figure 1 is a side elevation of a machine embodying my invention. Fig 2 is a cross-section of the bottom of the seed-hopper, the vertical seed-tube beneath such hopper, and the boot or heel of the runner into which such seed-tube is projected. Fig. 3 is a plan of the rotating star-wheel which carries the seed-plate, the latter being shown seated therein. Fig. 4 is a plan of the cut-off plate or upper plate in the bottom of the seed-hopper.

A is the tongue of the planter, attached at its rear end to the center of the axle H′ of the carrying-wheels H, and at the front end of the planter to the cross-beam A′.

B is the runner or furrow-opener, pivotally attached at its front end to the cross-beam A′, and provided at its rear end with a hollow boot, B′, which is sleeved vertically upon the seed-tube C.

G is one of the pair of hounds or braces attached at its front end to the side of the tongue A, under the cross-beam A′, and at its rear end fastened upon the axle H′ on the inner side of the carrying-wheel H.

D is a beam extending transversely of the machine from one boot B′ to the other, and suitably attached at its rear side to the front of such boots.

E is a horizontal lever, fulcrumed in a bracket, *d*, attached to the under side of the tongue A, and having at its front end a slotted connection to the bar D, and provided at its rear end with the segmental gear *a*.

F is a hand-lever located conveniently to the driver's seat I, and fulcrumed on the tongue A, and provided at its lower extension with the segmental gear *c*, which engages and actuates the lever E through the medium of the gear *a*.

By the forward and backward oscillation of the lever F the forward end of the lever E is caused to rise or fall, carrying with it the cross-beam D and with it the boots B′. A segmental ratchet, *b*, rigidly attached to the upper part of the tongue A, with which the lever F is detachably connected by means of the usual pawl, F′, enables the driver to lock the lever F in any position upon such ratchet, and thereby change and adjust the boots B′ to or in any desired altitude, and thereby most effectually control and regulate the depth of planting. The driver's seat I is projected sufficiently to the rear to nearly balance the dropper and the seed mechanism. The carrying-wheels H follow the runners B, respectively, in the usual way, and serve also as covering-wheels.

The description just given involves the mechanism employed in adjusting the depth of planting; and it will be observed that I dispense with the usual double frame and the joint between such frames, and thereby place the depth of planting more fully within the control of the driver, and render the machine more compact and convenient to handle, and enable the driver to approach more nearly to the fence at the ends of the rows.

In transporting the machine, the runners B, by means of the mechanism heretofore described, can be thrown up out of the ground and there suspended on their pivotal front ends, B^2, and the lever E.

I will now proceed to describe the second part of my invention. Beams *e e*, Fig. 1, are placed transversely of the machine on the braces G. Upon the beams *e e* is placed the iron plate C′, extending across the machine

and terminating at each end in the seed-tubes C, integral with such plate C′. A groove is formed in the center of the top of the plate C′ and extends through the entire length of such plate.

An actuating-bar, K, is reciprocated in such groove by means of the usual dropper-lever, K′. Upon the plate C′ is rigidly attached the base circular plate L, Fig. 2, in which latter plate, at one side of the bar K, is provided an egress-hole to permit the passage of the seed from the seed-plate N into the seed-tube C.

M is a star-plate, Fig. 3, having the zigzag channels *m*, the inner rim, *m′*, and the outer rim, m^2. N is a detachable seed-plate having the seed-cells or measuring-cups *n*, and seated in the rim *m′* by means of lugs *n′* on the periphery of such seed-plate, resting in corresponding recesses in the upper edge of the rim *m′*. The inner rim, *m′*, extends slightly downward, and when the plate M is placed over the plate L, such rim *m′* encircles the plate L, and the latter serves as a pivot for the rotation of the plate M.

A vertical stud, K^2, upon the reciprocating bar K, traverses the channels *m* of the plate M, and thereby causes an intermittent rotation of the plate M, and with the latter the coincident rotation of the seed-plate N.

O is the usual cut-off plate placed upon the plate M, and provided with the usual orifice, *a*, and cut-off *o*.

The reciprocating bar K, held within the groove in the upper surface of the plate C′, can have no lateral movement, and therefore, as it traverses the channels *m*, necessitates the rotation, intermittently, of the plate M. Each action of the bar K causes the pin K^2 to traverse one straight portion of the channels *m*, and as the number of such straight portions is the same as that of the seed-cups *n*, each action of the bar K causes a seed-cup, *n*, to pass over the outlet *a* in the plate O.

The advantage of this mode of rotating the seed-plate is that it gives a certain quick action, and by reason of the stud K^2 stopping at each action in an angle, the usual ratchet mechanism is dispensed with. The stopping-point of the pin K^2 is in each angle slightly beyond the center, to preclude such pin from returning in its track.

A short lever, *f*, is fulcrumed transversely of and under one of the bars *e*, and pivotally attached at its rear end to the rod *f′*, which latter is pivotally connected at its outer end to the upper end of the usual flipper-valve, f^2, fulcrumed vertically in the seed-tube C for the usual purpose of securing a second or double drop of the seed.

What I claim as my invention, and desire to secure by Letters Patent of the United States, is—

1. In a corn-planter, the combination of the runner B, pivotally supported at its front end and provided with the boot B′, the seed-tube C, the cross-beam D, lever E, and hand-lever F, substantially as shown and for the purpose described.

2. In a corn-planter, the runner B, pivotally supported at the front end, the boot B′, seed-tube C, adjustably inserted in such boot, the lever E, fulcrumed horizontally and provided with the gear *a*, and connected to the boot B′, and hand-lever F, suitably fulcrumed on the frame of the machine and provided with the gear *c*, adapted to engage the gear *a*, and thereby shift the rear of the runner B in a vertical direction, substantially as shown and for the purpose specified.

3. In a corn-planter, the combination of the runner B, pivotally supported at its front end, and having the vertically-hollow shank or boot B′, the seed-tube C, adjustably inserted in such boot, the lever E, suitably connected at its front end to such boot, and provided with gear *a*, and the hand-lever F, provided with the gear *c*, and means for locking the lever F in any desired position, whereby the depth of planting may be adjusted as desired, substantially as shown and for the purpose mentioned.

4. In a corn-planter, the combination of the following elements: the runner B, pivotally supported at its front end and provided with the boot B′, the seed-tube C, cross-beam D, lever E, hand-lever F, the bar K, provided with the stud K^2, and the wheel M, provided with the channel *m*, substantially as shown and for the purpose described.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM H. KADEL.

Witnesses:
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