J. E. BERING, O. COLBORNE & R. B. RICHMOND.

Corn-Planter.

No. 215,203. Patented May 13, 1879.

Fig. 1.

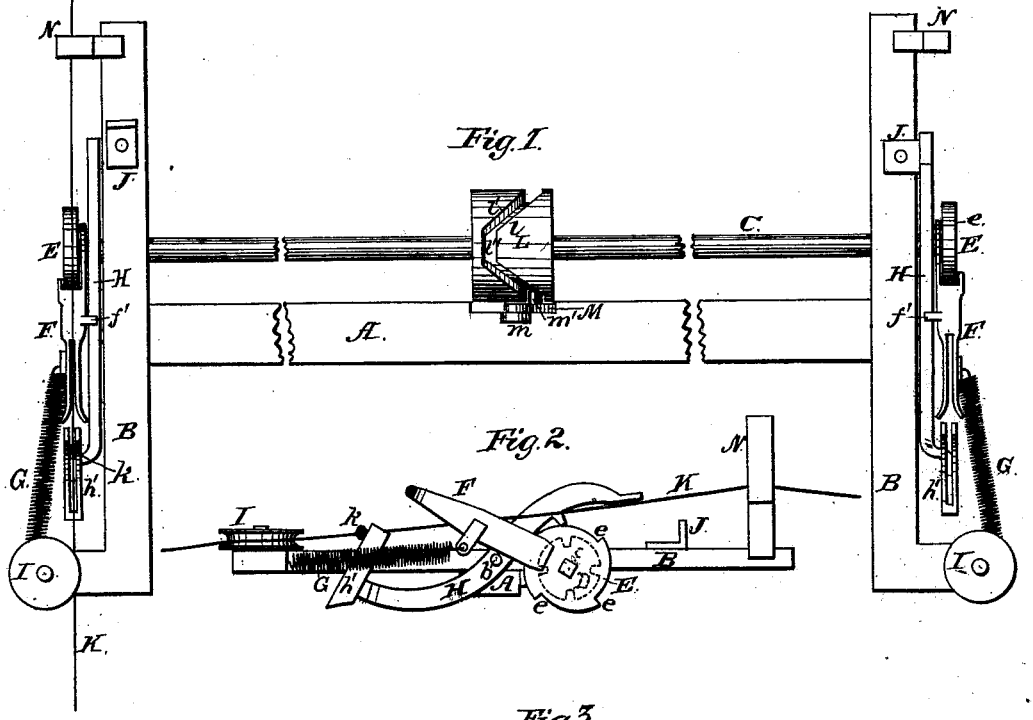


Fig. 2.

Fig. 3.

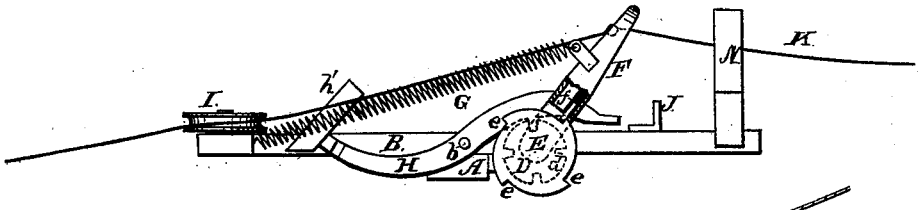


Fig. 4.

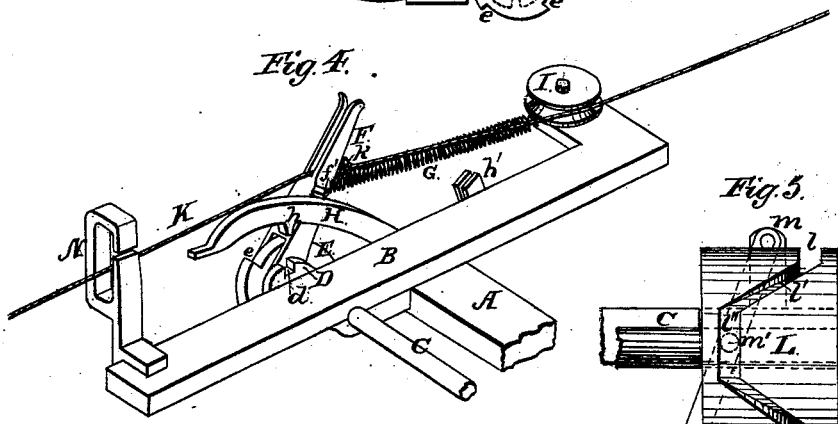
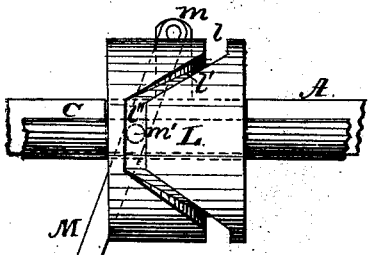


Fig. 5.



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UNITED STATES PATENT OFFICE.

JAMES E. BERING, OF DECATUR, OLIVER COLBORNE, OF CHICAGO, AND ROME B. RICHMOND, OF MACON COUNTY, ASSIGNORS TO CHAMBERS, BERING & QUINLAN, OF DECATUR, ILLINOIS.

IMPROVEMENT IN CORN-PLANTERS.

Specification forming part of Letters Patent No. **215,203**, dated May 13, 1879; application filed November 27, 1878.

To all whom it may concern:

Be it known that we, JAMES E. BERING, of Decatur, Macon county, Illinois, OLIVER COLBORNE, of Chicago, Cook county, Illinois, and ROME B. RICHMOND, of Macon county, Illinois, have invented certain new and useful Improvements in Corn-Planters; and we do hereby declare that the following is a full, clear, and exact description of the invention, which 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 of reference marked thereon, which form a part of this specification, in which—

Figure 1 is a top view of a construction embodying our invention. Fig. 2 is a side elevation with the parts in same relative positions as at Fig. 1. Fig. 3 is a side elevation with parts in different relative positions from those shown at Fig. 1, and partly broken away. Fig. 4 is a perspective view. Fig. 5 is a front elevation of the central parts of the device.

This invention relates to attachments to corn-planters, intermediate between the seed-dropping devices of the planter and a knotted cord or wire stretched over the ground to be planted; and the invention consists, first, in the method of transmitting an intermittent rotary motion, in one direction, to a shaft, by means of a forked lever having a spring-pawl which acts on a ratchet-wheel fixed to the shaft in such manner that an oscillating movement of the forked lever will impart the movement stated to the shaft; second, in a spring arranged to retract the forked lever after each forward impulse given it by the knotted cord or wire; third, in a detaining-catch arranged in such manner as to lock or hold the parts acted upon by the forked lever immediately after each movement given thereto by the lever, and further arranged so that the knots on the cord or wire, as they progressively approach the forked lever, will act upon said detaining-catch to release the parts and permit their receiving an impulse from the forked lever; fourth, in a tappet projecting from the forked lever in such proximity to the detaining-catch, hereinbefore mentioned, that the lever, in completing its throw to actuate the seeding devices, may actuate the detaining-catch and cause it to engage with the parts which it holds; fifth, buttons or reversible supports to sustain the detaining-catches not operating; sixth, a cam-grooved disk or wheel for imparting an oscillating movement to the lever which actuates the seed-slide connecting-bar, having the groove so constructed that it will act at the desired time to prevent accidental movement of the seed-slides of the planter.

Referring to the drawings by letters, the similar letters used as marks of reference being applied to the like parts in all the figures, letter A represents a bar, with a bar or head, B, on each end, and together constitute the frame to which the working parts are attached in such manner that said frame may be affixed upon an ordinary two-row corn-planter, with the bar A transversely thereon, and near to the seed-boxes.

C is a shaft journaled in the heads B, with its ends projecting, and each provided with a disk, D, having notches *d* in its periphery. Exterior to each disk D is also affixed to the shaft C a ratchet-wheel, E, having four teeth, *e*, a corresponding number with the notches *d* in the disk D.

F is a lever, its outer end forked and its inner end formed of a thin plate extended inward between the disks D E, and journaled on the shaft C, as shown by dotted lines at Fig. 3. The central part of the lever F is enlarged and contains a cavity, in which is located a spring-pawl, *f*, as shown at Fig. 3 of the drawings, where the face of the lever is partly broken away to show the spring-pawl, located so that it engages with the ratchet-teeth *e*.

G is a retracting-spring, extending from the lever F to the front end of a head, B. *f'* is a tappet projecting inward from the lever F.

H H are levers, centrally pivoted, one to the side of each head B, at *b*, its rear end extended backward over the disk D, and provided with a detaining-catch or detent, *h*, and its forward end provided with a forked arm or cam, *h'*, which is placed in line between the ordinary guide-pulley I and the forked lever F.

J J are buttons, pivoted one to each head B, and so constructed that either may be turned outward to hold the adjacent detent-lever H disengaged from the disk D when desired.

K is the wire or cord, with regularly-recurring knots *k*.

L is a barrel-cam, or cam-grooved disk or wheel, affixed to the mid-length portion of the shaft C. The cam-groove *l* in the disk L is formed of parts *l'*, which are diagonal to the axis of the shaft C, and parts *l''*, which are at right angles to the same axis, and one of which forms the connection between the adjacent ends of each two diagonal grooves *l'*, as shown at Fig. 5 of the drawings.

M is a lever, pivoted at its upper end to a standard, *m*, and its lower portion provided with a stud, *m'*, which extends into the cam-groove in the disk L.

The operation is as follows: The knotted cord or wire K being stretched across the field in the ordinary manner, the planter is placed so that the cord or wire will be guided by the inner side of a pulley, I, to the forked cam *h'* on the forward end of a detent-lever, H, and thence through the forked lever F, and backward through an ordinary guide-arm, N. As the machine advances, a knot, *k*, will strike the cam *h'* and depress the forward end of the lever H, and thereby raise the detent-lug *h* out of a notch, *d* in the disk D and release the shaft C, so that the knot *k*, striking the forked lever F, will oscillate it rearward, and the spring-pawl *f*, engaging with a tooth, *e*, in the ratchet-wheel E, will thereby oscillate the shaft C rearward one-fourth of a revolution. As the lever F approaches the latter part of its throw rearward, the tappet *f'* on its side will strike the rear end of the detent-lever H, and, pressing it downward, will cause the detent-lug *h* to again engage with one of the notches *d* in the disk D, thereby arresting the movement of the shaft C, and locking and securely holding it from any accidental movement until the next recurring knot *k* again releases it by pressing down the forward end of the detent H, as hereinbefore described. When the lever F reaches the rear part of its throw it will pass from beneath the knot *k*, and, being released, will be retracted and oscillated forward to its starting-point by the retracting-spring G, the spring-pawl *f* sliding over the sloping side of the teeth in the ratchet-wheel E, and not acting on the shaft C, which remains stationary while the return movement of the lever takes place, and is intermittingly rotated in one direction by the forward movement of said lever, as described.

The end of the row in planting being reached, the machine may be turned round and the knotted wire or cord placed so as to act on the devices at the other end of the bar A. While the cord or wire is acting on one forked lever, the detent-lever H at the other side of the machine should be kept disengaged by turning its adjacent button J outward to hold the detent-lug *h* disengaged with its disk D.

Each quarter-rotation of the shaft C will cause one of the parts *l'* of the cam-groove *l* to act on the lever M and move it in one direction, thus giving motion to the seed-slides of the planter, the lower end of the lever M being connected with the bar which connects said seed-slides.

When the shaft C is at rest, between its intermittent movements in one direction, the stud *m'* on the lever M will rest in one of the parts *l''* of the cam-groove *l*, and the direction of this part of said groove is such that an accidental jar of the seed-slides cannot impart a movement to the shaft C by means of the lever M, which is locked by the groove *l''* against movement arising from force applied to the lever M, but not against force applied to the shaft C.

What we claim as new is—

1. The forked levers F, in combination with a knotted check-row wire or cord, and devices to impart movement to the seed-slides of a planter, said levers being loosely mounted on the shaft to which they impart movement, and adapted to impart movement to said shaft and to the seed-slides as they (the forked levers) are moved in one direction by the knots on the wire or cord, and to complete their return movements without acting on the shaft on which they are mounted, substantially as and for the purpose specified.

2. The forked levers F, journaled on the shaft C, and having spring-pawl *f*, in combination with the shaft C, having ratchet-wheel E, by means of which an oscillating movement of the lever F imparts an intermittent rotary motion in one direction to the shaft C, substantially as and for the purpose specified.

3. The spring G, in combination with the forked lever F, for imparting motion to the seeding devices of a corn-planter, and knotted check-row wire or cord, adapted to give a return movement to the forked lever without moving the parts which it actuates in its forward movement, substantially as and for the purpose specified.

4. In combination with a knotted check-row cord or wire adapted to actuate the seeding devices of a corn-planter, a detent-lever, H, adapted to be disengaged from the actuating devices by the action of the knots on the cord or wire, to permit the knots *d'* to move the actuating devices.

5. In combination with an intermittingly-rotating shaft, C, and a knotted check-row wire or cord, a locking-lever, H, adapted to lock the shaft C, and to be released by the action of the knots of the check-row wire or cord on said lever.

6. In combination with the detent-lever H and shaft C, a forked lever, F, having a projecting stud adapted to actuate the detent-lever and arrest the motion of and hold the

shaft C, substantially as and for the purpose specified.

7. Pivoted buttons J, in combination with the detent-levers H and notched disks D, as and for the purpose specified.

8. In a check-row attachment to corn-planters, an intermittingly-rotating shaft, C, with its central part constructed, substantially as described, to impart movement to the lever which actuates the seed-slides, and to form a lock to prevent accidental movement of the seed-slides.

9. The disk L, having cam-groove *l*, constructed, substantially as described, with diagonal portions *l'*, connected by circumferential portions *l''*, in combination with shaft C and lever M, so that the diagonal parts *l'* will give motion to the seed-slides, and the parts *l''* will act as stops, substantially as and for the purpose specified.

In testimony that we claim the foregoing as our own we affix our signatures in presence of two witnesses.

JAMES E. BERING.
OLIVER COLBORNE.
ROME B. RICHMOND.

Witnesses for Jas. E. Bering:
L. L. BURROWS,
HENRY A. WOOD.
Witnesses for Oliver Colborne:
WM. A. RICE,
W. H. DUNN.
Witnesses for Rome B. Richmond:
WILLIAM BARNES,
A. E. HARMON.