A. G. Aiken,

Corn Planter.

No. 93,510. Patented Aug. 10. 1869.

Fig. 1.

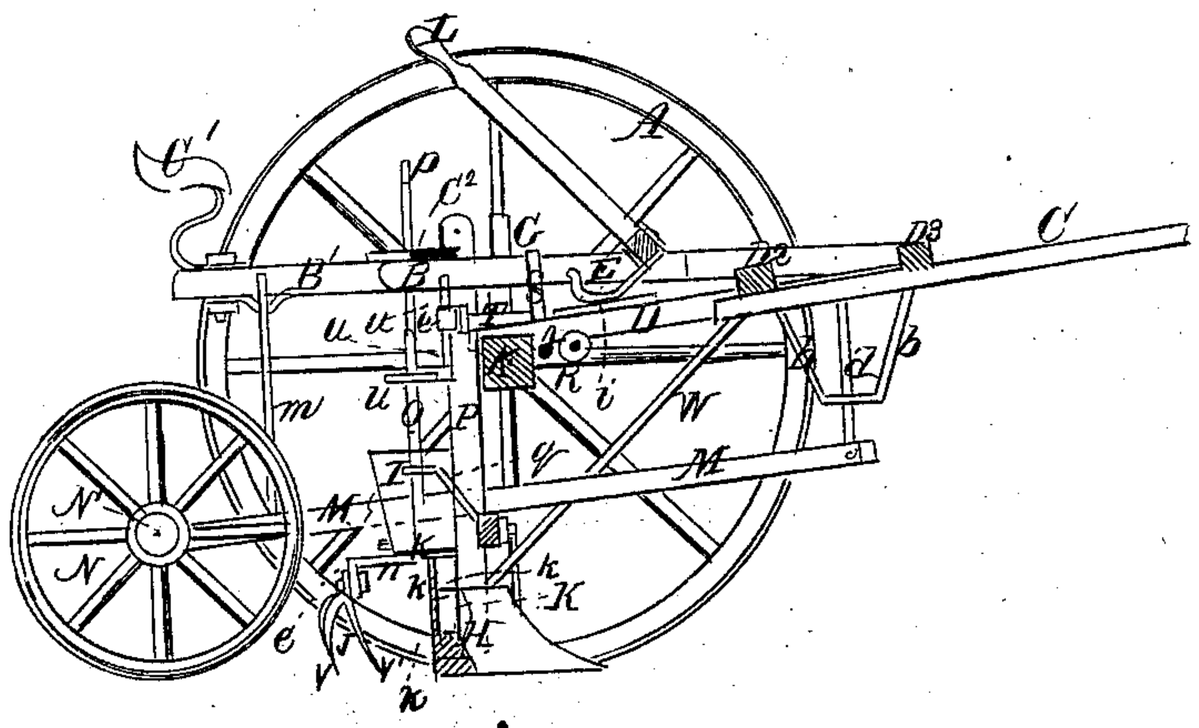


Fig. 2.

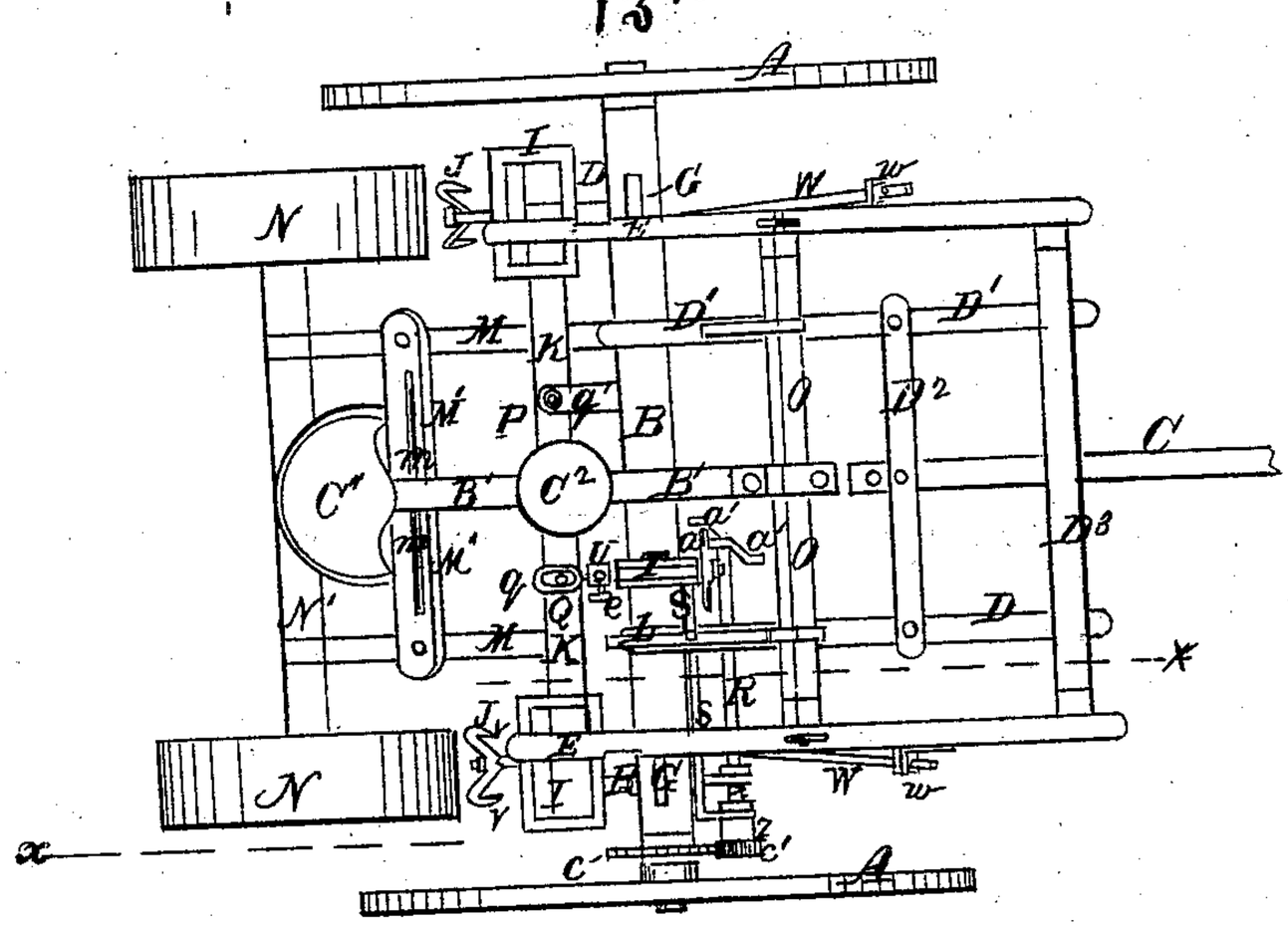
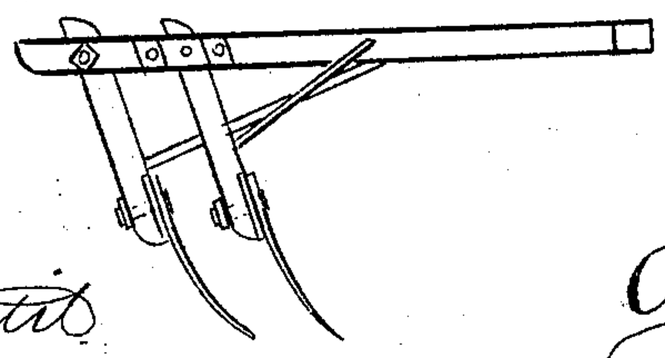


Fig. 3.



Witnesses:

C. A. Pettit

F. C. Dewey

Inventor:

A. G. Aiken

by Munn & Co

attorneys

United States Patent Office.

AARON G. AIKIN, OF SOMERTON, OHIO.

Letters Patent No. 93,510, *dated August* 10, 1869.

IMPROVEMENT IN COMBINED CORN-PLANTER AND CULTIVATOR.

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, AARON G. AIKIN, of Somerton, in the county of Belmont, and State of Ohio, have invented a new and improved Combined Corn-Planter and Cultivator; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a longitudinal vertical section through line *x x* of fig. 2, a portion of the plow having been broken away.

Figure 2 is a plan.

Figure 3 is a detached view of the cultivator-bars and teeth as adapted for use in connection with my improved instrument.

The object of this invention is to provide for public use, in connection with corn-planters, an improved device for raising and lowering the plows, rollers, &c., together with an improved feed-regulator, and an improvement in the construction of the covering-device, the whole being so constructed and arranged as to adapt it for convenient use either as a cultivator or corn-planter.

In the drawings—

A A represent the wheels;

B, the axle;

C, the draught-pole; and

D D^1 D^2 D^3, that part of the frame which is permanently attached to the axle and draught-pole, and is employed whether the instrument be used for planting or cultivating.

E E represent two parallel bars, articulated to the ends of the cross-bar B^3, and extending back over the axle, between guides G G, which allow their rear end to rise and fall in a vertical line, but not to deflect to one side or the other.

F F are the plow-standards, attached to the rear ends of the bars E E, and vertically adjustable by means of a series of holes in the standards, through which they can be bolted to the bars at any required height.

H H are the opening-plows;

I I, the seed-boxes;

J J, the covering-plows;

K, a transversely-vibrating rod, connecting and operating the slides in the bottom of the seed-box that distribute the seed; and

K′, a vertical rod inside of the seed-conductor, connected at its upper end to the vibrating rod K, pivoted at *k*, and supporting a seed-drop, *k′*, at its lower end, which is vibrated laterally by the movement of the rod K.

Projecting downward from the front end of the bars D D^1, are two studs, *d d′*, supported by suitable braces, *b b*.

To the lower end of each stud is articulated a long bar, M, extending back under the axle, and between the seed-boxes, and having its rear end formed into a bearing for the axle N′ of two broad-rimmed covering-wheels or rollers N N, running directly behind the plows H J.

A cross-bar, M′, connects the two bars M M, near their rear end.

Above this cross-bar, and supported upon standards *m m*, projecting up from it, is the driver's seat C^1.

B^1 is a bar, running forward from the top of the standards *m m* to a rock-bar, O, to which it is properly articulated.

C^2 is a foot-rest for the driver.

The rock-bar O bears in the two beams E E, and is capable of being turned on its axis by means of a hand-lever, L, in a position convenient for the driver.

Attached to the rock-bar, directly above the two beams D D^1, are cam-arms or eccentrics, *i i*, which, when the bar is rocked on its axis, come in contact with the beams below, and raise the two bars E E, and the plows, seed-box, and apparatus connected therewith, so as to clear the plows from the ground.

The cams are so curved and placed with relation to the rock-bar and beams below, that when the handle of the lever L is thrown down against the axle, the lower end or bearing-point of the cam runs forward of the vertical line of its upper end, and forms a simple and convenient lock which prevents the frame E, plows, &c., from dropping again till the handle is raised by the driver.

The upper side of the beams D D^1 may be properly protected by iron plates, to prevent being worn by the cams.

P is a lever, by which the driver can at any moment operate the seeding-apparatus by hand, when the wheel-gear is out of order or ungeared.

Q is another lever, likewise projecting up from the rod K, and passing through a fulcrum-plate, *q*, by means of which the seeding-apparatus is operated mechanically by power obtained from the right wheel.

The hub of the right wheel is provided with a cog-rim, *c*, which operates in connection with a small pinion, *c′*, on the end of a short shaft, R, the pinion running loosely on the shaft, and being used in connection with a sliding friction-clutch, *r*, which can be caused to engage with or disengage from it by means of a sliding rod, *s*, and lever S.

At the inner end of the shaft R, and at right angles with it, is a short rock-shaft, T, the supporting plate of which is fastened across the upper side of the axle.

On the front end of the rock-shaft is fixed a lozenge-

shaped arm, *a*, which is first thrown to one side and then to the other by a bent arm or cam, *a'*, on the end of shaft R, as the latter revolves, thus rocking the rod T rapidly and continuously on its axis, as long as the wheels *c c'* are in gear.

A vertical slot is made in the rear end of the shaft T, and through this slot extends an upright bent rod, *u*, adjustable vertically by means of a set-screw, *e*, in the side of the shaft.

The lower end of the rod *u* is bent back to a nearly horizontal position, and formed into a loop through which extends the lever Q.

It is evident that by adjusting the rod *u* up or down in its socket, the loop, which comes in contact with the lever, and operates it as the shaft T is rocked, will be moved further from or nearer to the fulcrum of the lever, and will "throw" the lever more or less, according to the vertical adjustment of the rod, thereby enabling the operator to regulate perfectly the movement of the slides that plant the seed.

In the construction of this improved machine, it will be found best to bend the upper end of the lever S in the form of an elbow toward the lever L, so that as the latter is thrown down, in order to raise the plows out of the ground, it will strike the former, knock it back, ungear the wheels *c c'*, and prevent the spilling of the seed while the machine is going to or returning from the field.

In order that the draught-poles M M and wheels N N may be raised simultaneously with the plows and seed-boxes, I run a stout bar, V, across under the poles M M, from the lower end of one standard, F, to that of the other.

The lever-fulcra *q q'* may be attached to and supported by this cross-bar.

Braces W W, adjustable by means of screws and nuts *w w*, may extend from the plows or standards forward and upward to the side-pieces E, so that by adjusting the nuts, the draught of the plows may be regulated.

The covering-plows J. J are supported from the standards F F, by means of horizontal arms *n n*, bent down at both ends to form flanges, through which they can be bolted to the standards and the plows.

The plows themselves are cast or made with three prongs, *v v* v^1, all springing from a common head, v^2, which is bolted to the end of rod *n*, as shown in fig. 1.

The prong v^1 descends nearly straight to the ground, curving forward a little at its lower end. The other two prongs, *v v*, spring outward and backward from the head v^2, and then bend down and forward to the ground. This construction is fully shown in the drawings.

When it is desired to employ this instrument as a cultivator alone, the forward end of the bars E E can be disconnected from the cross-bar D^3, and the poles M M can be separated from the studs *d d*, after which the entire apparatus, consisting of the parts N N', M M, E, I, J, H, F, K, O, L, Q, B^1, C^1, can be detached and removed together, leaving only the draught-wheels, their axle, the tongue, and the frame D D^1 D^2 D^3.

Cultivator-bars and teeth, constructed as shown in fig. 3, may now be connected to the studs *d d*, and the instrument becomes a convenient, light, and simple cultivator.

The change from planter to cultivator, or *vice versa*, can be effected by a single hand in less than two minutes, when the machine is kept in the proper order.

Having thus described my invention,

What I claim as new, and desire to secure by Letters Patent, is—

1. In connection with the shaft R, slide K, lever Q, and rock-shaft T, constructed to operate as described, the upright bent arm *u*, when made vertically adjustable, substantially as and for the purposes specified.

2. The device for raising and depressing the plows, seed-box, &c., the same consisting of the rock-bar O, lever L, and eccentrics *i i*, the latter being so constructed as that when the lever L is thrown down against the axle, the bearing-point of the eccentrics runs forward of the vertical line of its upper end, and forms a lock, as and for the purpose specified.

3. In connection with a seed-planter, and for the purpose of operating as a covering-plow, the plows J J, when constructed with the parts *v* v^1 v^2, and supported by the part *n*, all constructed and arranged substantially as described.

Witnesses: AARON G. AIKIN.

WASHINGTON AIKIN,

JOHN B. AIKIN.