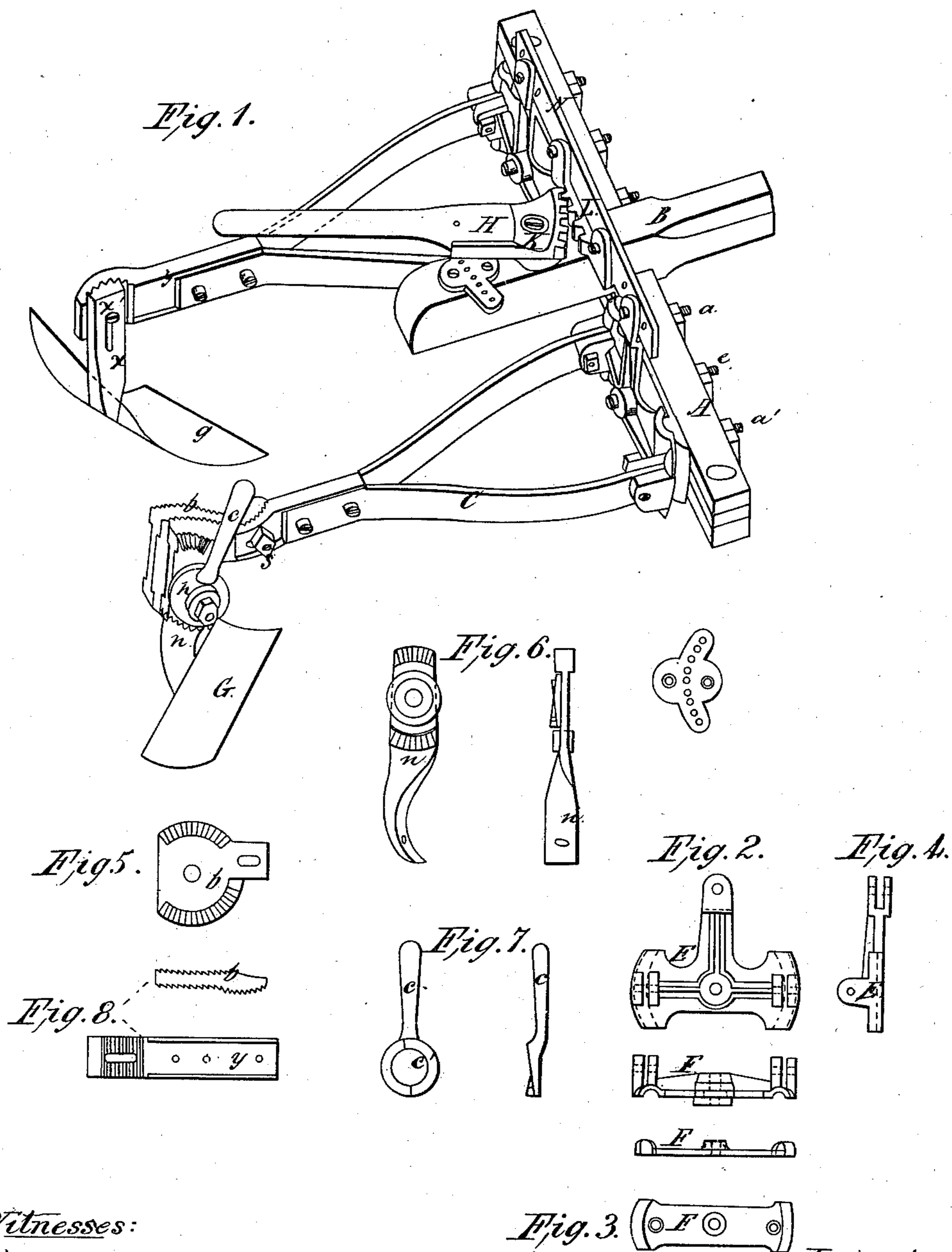


No. 80,556.

PATENTED AUG. 4, 1868.

R. McCORKELL.
CULTIVATOR.



Witnesses:

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UNITED STATES PATENT OFFICE.

ROBERT McCORKELL, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN CULTIVATORS.

Specification forming part of Letters Patent No. **80,556**, dated August 4, 1868; antedated July 15, 1868.

To all whom it may concern:

Be it known that I, ROBERT McCORKELL, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Cultivators; and I declare the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of these specifications, and to the letters of reference marked thereon.

Figure 1 is a perspective view. Figs. 2, 3, 4, 5, 6, 7, and 8 are views of portions detached.

The nature of my invention consists in a novel device for giving the plows or shovels a lateral motion; in a novel device for securing the plow-standards to the drag-bars, and a novel method of adjusting the angle of the plow.

To enable others skilled in the art to construct and use my improved cultivator, I will proceed to describe it.

I construct a frame consisting of a cross-bar, A, and tongue B. The front bar, A, is slotted longitudinally, so as to admit of a lateral adjustment of the drag bars or beams C. The drag-bars C are formed by two separate bars, divided at the front and united at the rear end, as shown in Fig. 1. The drag-bars C are pivoted to a single piece, E, of which Fig. 2 is a rear plan view. This plate E is pivoted to a corresponding plate, F, of which Fig. 3 is a rear plan view, which is secured to the front bar, A, by the bolts *a a'*, passing through the slot, as seen in Fig. 1. The plate E is secured to F by a bolt or journal passing through the center of both plates and extending through the slot in the cross-bar and held by a nut, *e*. It will thus be seen that the plate E is free to turn in a vertical plane, and that consequently the drag-bars will turn with it, thus throwing the plows G, attached to said drag-bars C, either to the right or left, as may be desired.

For the purpose of operating the plows G, the lever H is pivoted on the top of the tongue B, and at its front end this lever is attached to a metallic plate, K, having plain gear on a section of its periphery above the tongue. Directly in front of K is a rack, L, Fig. 1, with corresponding gear engaging with that on plate K, fastened to a bar, N, which connects the plates E by a bolt or pin passing in the upright projection on the plates, as seen in Figs. 4 and 1.

It will thus be seen that by moving the lever H the plates E are carried with it, by means of the connecting-bar N and rack L, thereby moving the plows, both in the same direction, to the right or left, according as the lever is moved in one or the other direction. By these means the plows are made to accommodate themselves to the sinuosities of the row of plants between them at the will of the operator.

The rear end of the drag-bar C is provided with a circular plate or enlargement, *b*, which has a series of V-shaped notches at its upper and lower edges on both sides or faces. The plow-standards *n*, at their upper ends, are provided with corresponding notches, as seen in Fig. 6. The standards *n* are fastened to the drag-bar C by a bolt passing transversely through them, secured by a nut in the usual manner; but between the nut and the drag-bar or standard is interposed a lever, *c*, and a rubber disk or ring, as shown in Fig. 1. It will be observed that the notches are so formed that their front faces form an inclined surface, so that when the plow strikes a rock, root, or other obstruction the upper end of the standard *n* will ride forward, the inclined surface of the notches thereon sliding up the corresponding faces of the notches on the head *b*, the rubber spring or disk *r* yielding sufficiently to allow this to be done, and thus permit the standard *n* to turn on the bolt and prevent the plow from breaking or injury. The lever *c* is provided with a circular plate, *c'*, through which the bolt passes, on the inside of which there are two sections of a curved incline plane, as seen in Fig. 7, fitting to corresponding sections of a similar form on the standard *n*, or the end of the drag-bar *b*, so that when the lever is drawn back it will draw on the bolt and compress the rubber spring, so as to hold the standard *n* in its proper place; but when it is thrown back by the plow striking an obstruction the lever can be thrown forward to slacken the spring, so as to let the standard back to its place without unscrewing the nut on the bolt. I make a joint in the drag-bar C in front of the head *b*, and close to it, by forming a curve on a section of a true circle, and having both the drag-bar C and head *b* serrated, so that the notches correspond,

and can be held steadily in place by a bolt, *s*, passing through them, Fig. 1, and by having a slot in one or both parts of the drag-bar thus formed in which the bolt can slide, as seen in Figs. 1 and 5. It will be seen that the head *b* can be moved back or forward on the circle, thereby altering the angle of the plowshare, so as to cut a wide or narrow furrow, and throw the furrow a greater or less distance from the heel of the plow as the angle is more acute or obtuse; or I construct a standard, *x*, with ribs or serrations running longitudinally on one side, which is made rounding, and cut a slot longitudinally in it, and cut a recess in the beam *y*, Fig. 8, to correspond to the size and shape of the standard, and having ribs or serrations to engage with those on the standard, and also a slot running transversely to that in the standard, as seen in Fig. 8, and secure them by a bolt, *t*, passing through those slots, which holds them firmly together, *x'*, Fig. 1. It will thus be seen that by unscrewing the bolt and turning the standard it will alter the angle of the plowshare, and by raising and

lowering the standard on the beam or drag-bar it will alter the depth of the furrow.

By attaching these improvements to the cultivator already patented to me, No. 50,257, I construct a cultivator that is capable of all required adjustments, and that can be readily and easily manipulated.

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

1. The lever *H*, rack *L*, and connecting-rod *N*; in combination with the plates *E*, for the purpose set forth.

2. The lever *c*, in combination with the drag-bars *C*, standard *n*, and rubber spring *r*.

3. The mode of attaching and securing the head *b* of the drag-bar *C*, for the purpose of adjusting the angle of the plows.

4. The mode of attaching and securing the standard *x* to the beam *y*, as and for the purpose set forth.

ROBERT McCORKELL.

Witnesses:

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