R. McCORKELL.

Wheel-Cultivator.

No. 50,257. Patented Oct. 3. 1865.

Fig. 1.

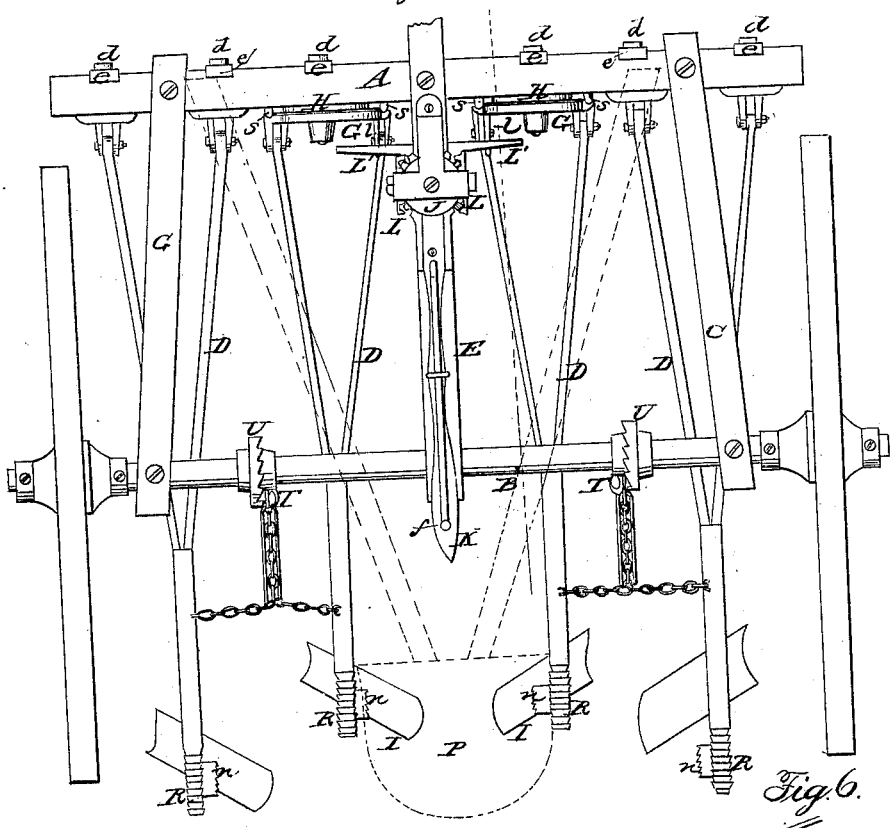


Fig. 6.

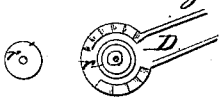


Fig. 3

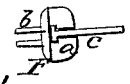


Fig. 4.

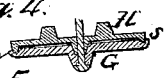


Fig. 5.

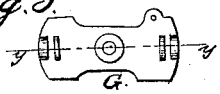
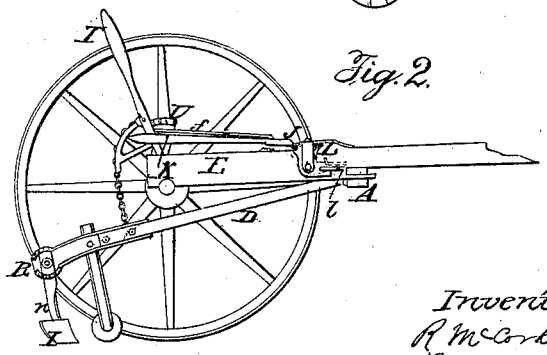


Fig. 2.



Witnesses.

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UNITED STATES PATENT OFFICE.

ROBERT McCORKELL, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN CULTIVATORS.

Specification forming part of Letters Patent No. **50,257**, dated October 3, 1865.

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 hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, and to the letters of reference marked thereon.

Figure 1 is a top-plan view; and Fig. 2 is a longitudinal vertical section of the same, taken in the line of *x x*, Fig. 1. Figs. 3, 4, 5, and 6 are views of portions detached.

Similar letters indicate corresponding parts in the various figures.

The nature of my invention consists in a novel method of attaching the drag-bars to the frame to admit of lateral adjustment; in novel devices for attaching and pivoting the drag-bars; in a novel arrangement of devices for operating the intermediate plows, and a novel method of attaching the plow-standards to the drag bars or beams.

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 the front cross-bar, A, connected to the axle B by the two side bars, C C, and the tongue E, as shown in Fig. 1. The front bar, A, is slotted longitudinally to permit the lateral adjustment of the drag bars or beams D by moving their attachments in the slot, as may be desired. The drag-bars D are formed of two separate bars, divided at the front and united at their rear portion, as shown in Fig. 1. The two outer bars D are pivoted at their front ends to the metal pieces F, the peculiar construction of which is clearly shown in Fig. 3. This piece F is provided on its front side with a flat projection, *a*, of proper thickness to fit the slot in the bar A, the projection *a* having a recess cast therein of proper form and size to receive the head of a bolt, *c*, as shown in Fig. 3.

On the rear side of F are two projecting lugs or flanges, *b*, having their planes at a right angle to that of *a*, and between these two flanges *b* the front end of the drag-bars D are pivoted, as shown in Fig. 1. The bolt *c*, being inserted in the recess, as shown in Fig. 3, is then thrust through the slot in bar A, the flat projection *a* entering therein, when the clamp *e* is slipped onto the bolt *c* on the front side of bar A, and a nut, *d*, is screwed on to hold the parts securely in place.

The two central drag-bars D are each pivoted to a single piece, G, of which Fig. 5 is a rear-plan view. This plate G is pivoted to a corresponding plate, H, which is provided with a front horizontal flange, *a*, similar to that of F, fitting in the slot in bar A in a similar manner. The plate H is cast with a journal projecting from its rear face, which fits into a corresponding recess in the center of plate G, a bolt passing through the center of both and extending through the slot in bar A, where it is secured by the clamp *e* and nut *d*, thus holding the plates G and H together, and at the same time attaching them securely to the bar A.

On the rear face of plate H, at each end, curved projections *s* are cast, which fit into corresponding grooves in the front face of plate G, as shown in Fig. 4, which is a longitudinal section taken on the line of *y y* of Fig. 5. It will thus be seen that the plate G is free to turn in a vertical plane, and that consequently the drag-bar attached thereto will turn with it, thus throwing the plows I I, attached to said bars D, either to the right or left, as may be desired. For the purpose of operating these intermediate plows, I I, the lever K is pivoted on the top of the tongue. At its front end this lever is attached to a circular metallic plate, J′, having beveled gear on its periphery.

On each side of the tongue, directly below J, an elbow-lever, L, is pivoted, having its upper end circular, and provided with bevel-gear teeth engaging with those on plate J. At the front end of these elbow-levers L an arm, L′, projects at right angles from the tongue, as shown in Fig. 1. These projecting arms L′ are slotted longitudinally, and into these slots enters a pin, *l*, which is secured to the rear face of plate G at its inner end, next to the tongue, as shown in Figs. 1 and 2.

It will thus be seen that as the lever K is moved to the right or left the elbow-levers will be operated by the teeth of plate J, the arm L′ of one being depressed and that of the other being elevated, and, of course, carrying with them in their movements the inner ends of the pivoted plates G, thereby moving the plows

I I both in the same direction, either to the right or left, according as the lever K is moved in one or the other direction. By these means the plows I I are made to accommodate themselves to the sinuosities of the row of plants between them at the will of the driver, who is mounted upon the seat P, just in rear of the end of the lever K.

A rod, *f*, is pivoted on top of the lever K, and has its front end bent down at a right angle, and projects through a hole in the lever, where it enters holes in a plate fastened on the upper side of the tongue, and thus serves to lock the lever K in position and keep the plows from moving when desired to have them remain stationary.

The rear end of the drag-bars D is provided with a circular plate or enlargement, R, 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 a corresponding series of notches, as clearly shown in Fig. 1. The standards *n* are fastened to the bars D by a bolt, which passes transversely through them, secured by a nut in the usual manner; but between the head of the bolt and the bar is interposed a rubber ring or disk, *r*, as shown in Fig. 6.

It will be observed that the notches are so formed that their front faces form an inclined surface or an acute angle, so that when the plow strikes a stone, root, or other solid obstruction the upper ends of the standards *n* will ride forward, the inclined surfaces of the notches thereon sliding up the corresponding faces of the notches on the head R, the rubber spring or disk *r* being compressed and yielding sufficiently to permit this to be done, and thus allow the standard *n* to turn on the bolt and prevent the plows from being broken or injured.

To replace the plow it is only necessary to loosen the nut on the bolt and turn them back to their original position.

Two arms, U, having ratchet-teeth upon their inner faces at the top, are secured to the axle B, as shown in Figs. 1 and 2. A lever, T, is pivoted to the lower portion of these arms, and has a projection on it that engages in the notches, as shown in Fig. 1. Chains connect these levers T to the drag-bars, as shown, by which the plows can be raised from the ground and held suspended there when desired.

By these means I construct a cultivator that is capable of all the required adjustments, and that can be readily and easily manipulated. By detaching the drag-bars from the frame the corn-planter devices heretofore patented to me can be easily substituted, and thus the frame and running-gear can be made to answer a double purpose, whereby a great saving of expense is effected for the farmer.

Having thus fully described my invention, what I claim is—

1. The metal pieces F, provided with the horizontal flange *a*, recessed to receive and hold the bolt *c*, and having the lugs or projections *b*, for the purpose of attaching the drag-bars D to the slotted bar A and adjusting the same therein, as set forth.

2. The plates G and H, constructed and arranged to operate in combination with the drag-bars D, as and for the purpose set forth.

3. The plate J, in combination with the elbow-levers L and plates G, for the purpose of moving the plows I I, as herein described.

4. The rubber disk *r*, or its equivalent, in combination with the standard *n* and head R of the drag-bar, when constructed and arranged to operate as and for the purpose set forth.

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JOHN R. MANDERFIELD, Jr.