(No Model.)

L. P. HELMER.

CULTIVATOR.

No. 367,519. Patented Aug. 2, 1887.

Fig. 1.

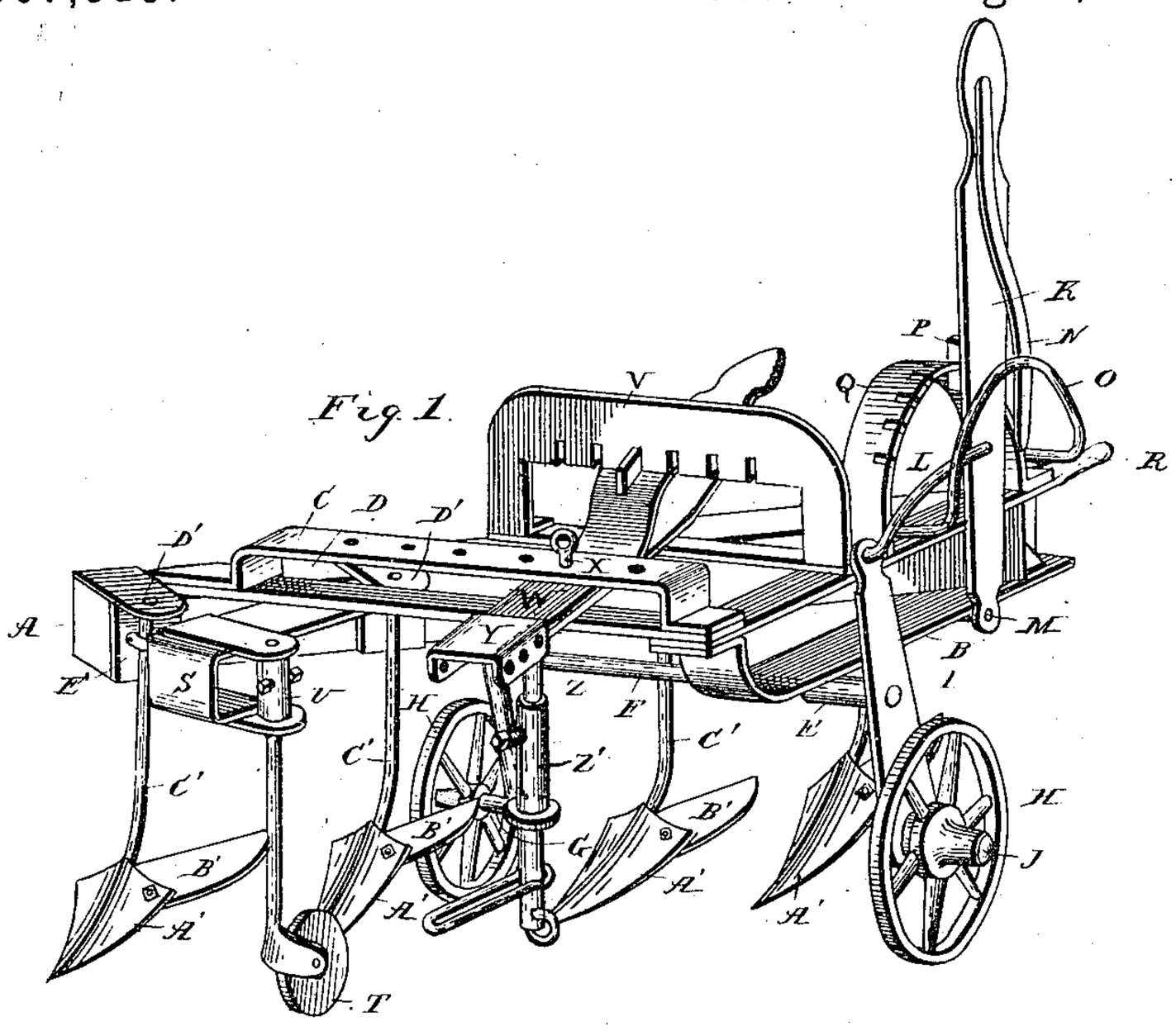


Fig. 2.

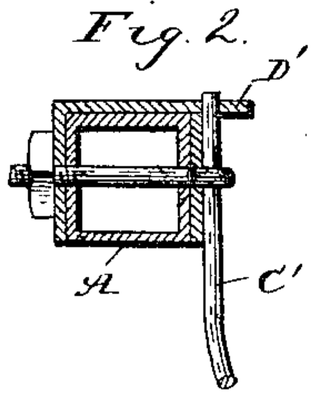


Fig. 3.

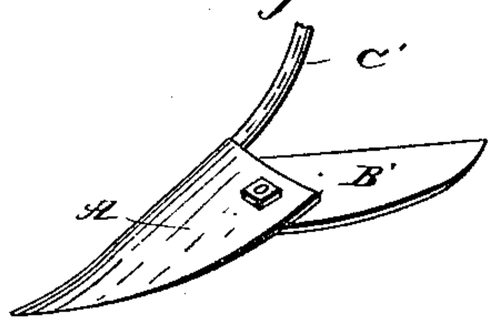


Fig. 4.

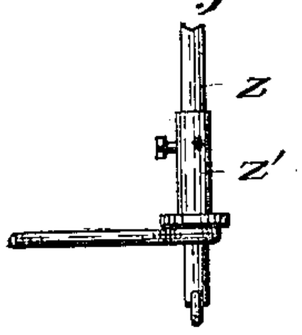
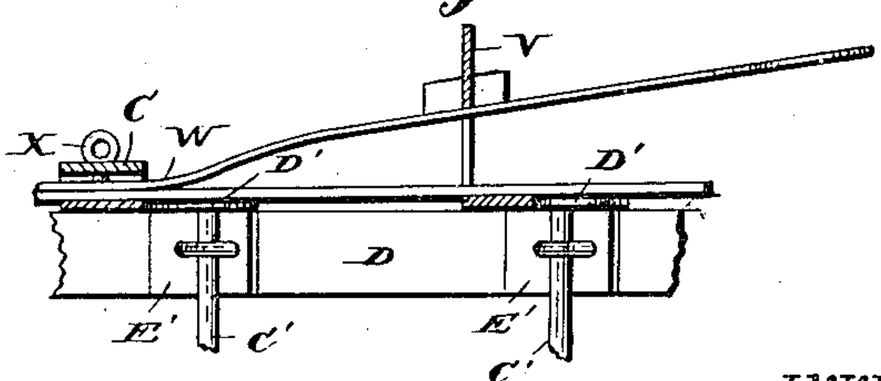


Fig. 5.



WITNESSES

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LORENS P. HELMER, OF WATSONVILLE, CALIFORNIA.

CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 367,519, dated August 2, 1887.

Application filed April 29, 1887. Serial No. 236,545. (No model.)

To all whom it may concern:

Be it known that I, LORENS P. HELMER, a citizen of the United States, residing at Watsonville, in the county of Santa Cruz and State of California, have invented certain new and useful Improvements in Cultivators, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in wheel-cultivators, the peculiarities of which will hereinafter appear in the specification, and be pointed out in the claims.

In the accompanying drawings, forming a part of this specification, and on which similar letters of reference indicate the same or corresponding features, Figure 1 represents a perspective view of my improved cultivator. Fig. 2 is a detail view showing the manner of fastening the plow-standards to the main frame, and Fig. 3 is a detail view showing the plow and its attached wing; Fig. 4, a detail view of the additional depending draft-bar, and Fig. 5 a detail sectional view showing more plainly the rear portion of the draft-bar.

The main frame of the cultivator consists of two bars, A and B, the same being united at their rear ends by bolts or otherwise, and held together near their forward ends by the cross-bar C, said cross-bar having throughout its length a slot, D, and being provided with apertures and a pin which extends through the slot.

Mounted in bearings E, on the under side of the main frame, is the axle F, which beyond the bearings on one side curves downwardly, and then outwardly, forming a spindle, G, for one of the supporting-wheels H, while on the other side, instead of curving downwardly, it is rigidly secured to a lever, I, the lower end of which is provided with a spindle, J, and whose upper end is connected with the lever K by means of the link L, all as about to be described.

Projecting from the lower portion of the side beam, B, is a lug, M, to which the lever K is attached, and on which it works as on a pivot. The upper portion of the lever terminates in a handle for the driver to grasp, and extending from said handle downward is a spring, N, which presses against the rib O. The other side of the lever is provided with a tongue, P, which fits into notches in the segmental bar Q, fitted to the upper portion of the side beam, B.

The action of the spring is to keep the tongue normally pressed into one of the notches of the segmental bar. The purpose of this lever is to throw forward or backward from a vertical line the downwardly-extending portions of the axle which carries the supporting-wheels H, so that the cultivators, to be hereinafter described, will run to a greater or less depth into the ground, according to the position of the lever K. The rear of the beam B is provided with a handle, R, which the driver can take hold of to steady and partially direct the movements of the cultivator.

Projecting from the cross-bar D, near the far side thereof, as seen in Fig. 1, is a beam, S, the same being preferably formed of metal and having its end bent over and provided with apertures, so as to form a bearing for the shaft of the wheel T. The shaft is provided with an adjustable collar, U, and a set screw, so that it can be moved up or down on the shaft and the wheel adjusted so as to allow the forward plow to cut deeply into the soil or not, as desired.

The cultivator is especially adapted to be used in orchards, and when so used it is often desirable to have the front plow, which runs close to the tree, to sink but slightly into the ground, so as not to touch the roots, while it is desirable to have the rear plows, which are farther away, to plow more deeply. By my improved cultivator it can be seen that this is readily effected.

Extending across the frame is a segmental bar, V, provided with notches, into which a tongue on the draft-bar W fits. This draft-bar is pivotally mounted in a cross-bar, C, and is capable of vertical movement therein, as also of a movement upon the pivot-pins X. The purpose of this is to allow the driver, where the trees or shrubbery are low, to place the horses at a considerable distance from them, while the line of the draft will still be from or near the center of the machine. The forward end of the draft-bar is provided with a metallic cap, Y, the sides of which are pro-

vided with aperatures, and into which the chain or tongue from the whiffletree may be fastened by means of a bolt passing through the apertures and the chain or tongue. I have also provided this draft-bar on its under side with a bar, Z, on which is an adjustable collar, Z′, and to the end of which bar is attached a ring to prevent the collar from slipping off. The base of the collar is provided with a flange, and beneath this flange is placed a link or chain, to which the horses are attached when it is desired to plow the ground lightly. The draft being upward, has the effect of raising the forward part of the cultivator, so that the plows do not sink deeply into the ground.

As more plainly seen in Fig. 3, the plows A′ are each provided with an adjustable wing, B′, which is sharpened on its forward end, and is designed to cut down weeds as the plowshare turns them over.

The plow-standard C′ is round, and its upper end extends through a lip, D′, on the main frame. Just below the lip the standard is passed through an eye of a bolt which extends through the frame, and interposed between the frame and the standard is a washer, E′, which fits over the eye and keeps it from turning.

Owing to the fact that I have only one row of plows, I can plow on the hillside as well as on level ground, whereas in cultivators constructed with two rows the tendency of the plow is to crowd downhill, and the consequence is that the lower row plows much the deeper.

Owing to the manner in which I have arranged the draft-bar, I can with ease work two, three, or even four horses at a time without difficulty.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a cultivator, the combination, with the triangular frame, the side bars thereof united at their rear ends and running at an angle from each other, one of said bars being provided with plows, of a slotted and perforated cross-bar, C, a notched segment-bar, V, a draft-bar, W, adjustably pivoted in the slotted cross-bar and having a spring-catch engaging the segment-bar, a clevis-plate and a vertical bar, Z, extending below the draft-bar, and an adjustable collar and draft-link Z′, substantially as shown and described.

2. In a cultivator, the combination, with the side bars thereof united at their rear ends and running at an angle from one another, one of said bars being provided with plows and the other having a lever mounted thereon, and a crank-axle carrying supporting-wheels and rocked by said lever, of an adjustable wheel-standard carrying a caster-wheel mounted near the forward part of the diagonal beam or frame, whereby the front of the frame may be more or less elevated.

3. In a cultivator, the combination, with the side bars thereof united at their rear end and running at an angle from one another, one of said bars being provided with plows, and the other bar having a lever mounted thereon and connected with the axle carrying the supporting-wheels, so that the wheels and axle may be moved in a longitudinal plane, of the draft-bar pivotally mounted in the cross-bar, uniting the side beams of the main frame, the said draft-bar being provided with a tongue, and the main frame with a segment into which the tongue fits, whereby the movement of the draft-bar on its pivotal point may be regulated as desired.

4. In a cultivator, the combination, with the main frame, consisting of side bars united at their rear ends and running at an angle from one another, said frame being provided with plows and secured to an axle mounted in supporting-wheels, of a slotted cross-bar provided with apertures and a pin, a notched segment-bar, and the draft-bar provided with a pivotal aperture, and a spring-catch adapted to engage the segment-bar, whereby the position of the draft-bar may be laterally adjusted.

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

LORENS P. HELMER.

Witnesses:
D. ALEXANDER,
JOHN E. PENDERGAST.