

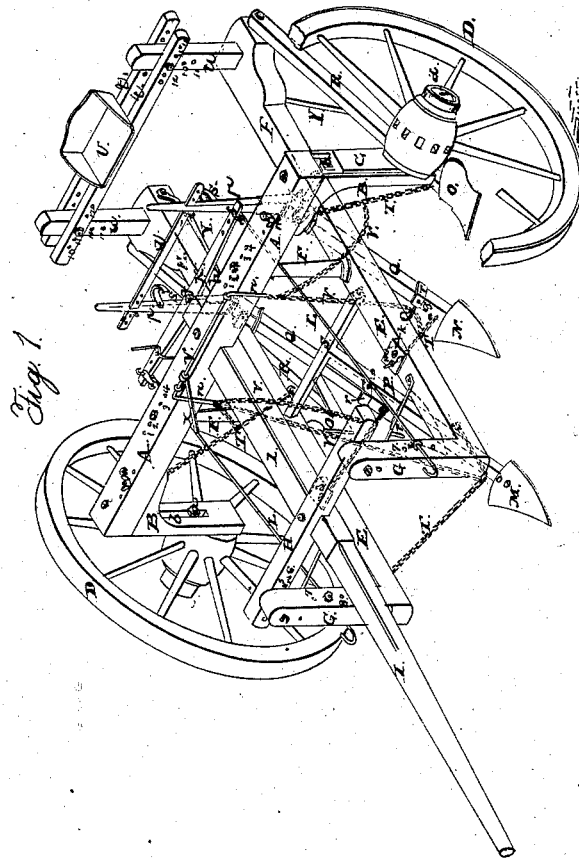
J. BREWER.

2 Sheets—Sheet 1

Wheel-Cultivator.

No. 47,699

Patented May 16, 1865.



Witnesses.
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H. L. Hill

Inventor:
James Brewer
by his attorney,
Thos. H. Dodge

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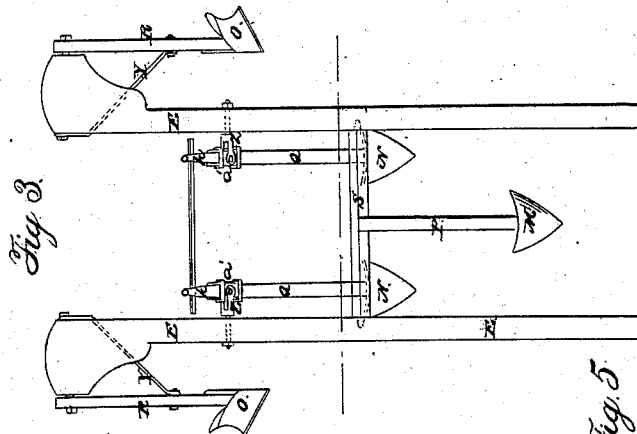


Fig. 3.

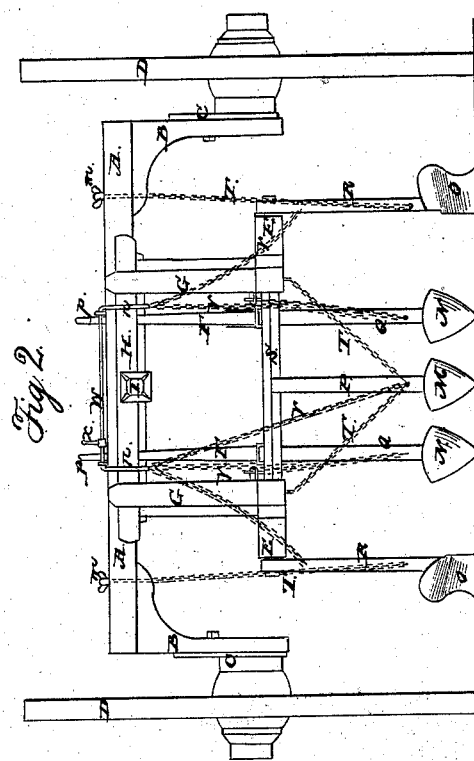


Fig. 2.

Fig. 4.

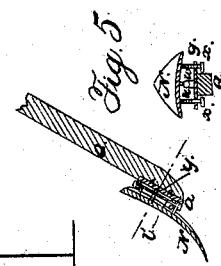


Fig. 5.

Witnesses.

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UNITED STATES PATENT OFFICE.

JAMES BREWER, OF ALBANY, ILLINOIS.

IMPROVEMENT IN CULTIVATORS.

Specification forming part of Letters Patent No. 47,699, dated May 16, 1865.

To all whom it may concern:

Be it known that I, JAMES BREWER, of Albany, in the county of Whitesides and State of Illinois, have invented certain new and useful improvements in cultivators adapted to general use, and which I have called a "Combination-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, in which—

Figure 1 represents a perspective view of my said combination-cultivator. Fig. 2 represents a top view of the beams and cultivator-plows attached to them. Fig. 3 represents a front view of the machine. Figs. 4 and 5 represent detached views, hereinafter to be referred to.

The object of my invention is to present to the farmer an implement which, by the adjustment of its cultivator-hoes, can be made adaptable to the cultivation of the various kinds of produce which, according to their nature, have heretofore required variously shaped and constructed cultivating implements, thus uniting in one machine all the advantages which heretofore could be obtained by separate machines only.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A represents a cross-beam, which constitutes the axle of my cultivator. It is supported on the standards B, in which the movable spindle-bars C are set and fastened thereto by means of screw-bolts *a*, which pass through the slots *b* of said standards B.

The supporting-wheels D of the cultivator are set upon and turn on the spindles *d*, which are secured to the bars C, and thus the axle A can be raised or lowered to adapt the cultivator to the height necessary for cultivating certain crops and to adjust the depth of the cultivator-plows.

E represents the cultivator-beams, on which the standards of the cultivators are secured. They are secured to the axle A by means of the standards F, which are bolted to said axle by means of screw-bolts *f*. The beams E can be spread or contracted in conformity with the nature of the crop by using either of the holes 1 2 3 4 in the axle A for the insertion of the bolts *f*, which secure the standards.

The standards G are secured to the beams E near their front ends, and their upper ends are braced together by means of the brace H. The brace H is also provided with adjusting-holes 5 6, which correspond in their position with the holes 1 2 3 4 on the main axle, for spreading or contracting the beams.

I represents the pole or tongue of the cultivator. It is bolted to the center of the axle A, and is also supported by the brace H. The single-tree K is secured by bolt *g* to the plate *h* of said tongue, and the draft-rods L, to which the chains or traces are attached, are secured to the ends of the single-tree, and their front ends pass through eyes *i* of the standards, whose positions can be raised or lowered on said standards by means of the adjusting-holes 7 8.

M, N, and O represent the cultivator-plows. They are secured to standards P Q R, which are bolted to the beams E by means of bolts in such a manner that they can be raised or lowered in swinging on said bolts for the purpose of regulating the depth to which they are to enter the ground or to raise them from the ground altogether when the machine is to be moved from the field. The front and center standard, P, of the plow M is secured to the cross-shaft S, which has its bearings in the beams E, and said standard and plow are adjustable in a like manner as the others above mentioned.

To prevent the plows from entering the soil beyond a certain depth, I use the chains T, which are secured to the plow-standards near their lower ends, and the upper ends of which pass through the axle A and through plates *k* on the beams E, and terminating in screw-bolts are secured to the timbers by means of the adjusting-nuts *m*, by which they are fastened and by which the length of the chains T can be regulated with great accuracy.

To enable the operator on his seat U to raise and lower the plow-standards and their plows, I attach the chains V to the supporting-chains and fasten their upper ends to the arms *n* of the rock-shaft W, which is operated by means of the hand-lever X, and thus all the plows are raised simultaneously and to an equal extent by operating the lever X.

The standard P of the front plow, M, and the standards R of both the rear plows are braced crosswise against side movements, the

former by chains, the latter by the braces or stays Y; but the standards of the center plows are capable of lateral movements, they being secured to swivel-bolts Z, (represented in a detached view at Fig. 3,) which permits their being turned upon the main bolt to be raised or lowered bodily or to turn laterally upon the bolt *a'*, which passes through the forks of bolt Z. This lateral movement is necessary for cultivating corn which may not have been laid out in straight rows, so as to enable the operator to guide the plows around irregularly-planted hills.

The standards Q of the plows N are provided with removable extension-pieces *p*, which the operator may use as handles to guide said plows in their lateral movement, and they also serve to receive a cross-brace, *q*, which is inserted into proper mortises on said extension-pieces when it is desired that the lateral movements of the two plows should be in unison.

r represents stirrups whose position can be adjusted upon the standard Q of the plows N by means of set-screws *g* to suit the convenience of the operator on his seat, and by setting his feet thereon he can guide the lateral motion of the plow at pleasure. I provide the extension parts *p* of said standards with leg-stirrups *s*, into which the operator can set his legs when the standards are used with said extension-pieces. The height of the seat U to suit the convenience of the operator for these various operations is made adjustable by supporting the seat upon the cross-bars *t*, which are bolted to the standards *u*, and the latter are provided with holes 10 11 12, through either of which the fastening-bolts can be passed. The position of the plows N can be further adjusted to cause them to throw the earth to or from the hills or plants. This I effect by hinging said plow-shovels to the rod *v*, which is supported upon the standard Q by means of the brackets *w*, and by passing through said bracket-plates the set-screws *x*, one at each side of the standard, by means of which the position of the plow-shovel can be adjusted to any desired angle.

The points of the shovels *o* are as far in the rear of the center line of the driving-wheels D as the points of the shovels N are in front of said line. The object of this is that when either wheel falls into a rut or rises over a clod the shovels will follow the movement of the wheel.

The operation of the machine is as follows: To cultivate grain or prepare the ground for planting, the spindle-stands C are regulated to lower the frame to the desired depth, and the eyes *i*, which support the draft-rods, have to be lowered accordingly. For this operation, all the shovels represented on the drawings are used simultaneously. When the ground is to be marked or layed off for planting corn the several parts of the machine remain in the position above described; but the three front shovels, M and N, are removed, leaving the

rear shovels, O, only to lay off the furrows, the width of the beams E having been previously adjusted to obtain the desired width for marking the furrows. To cultivate young corn the seat-bars *t* are lowered down upon the beams E, the extension-pieces *p* of the standards Q are removed, and the position of the stirrups *r* upon the standards Q is adjusted that the driver, while sitting on the seat U, can get his feet therein. The angles of the adjustable shovels N are now adjusted according to the direction the earth is to be thrown, either from or toward the hills, and the front shovel, M, is removed. The operator then straddles the corn with the shovels N, and by the action of his feet he can move either of the shovels independent of the other, or both in unison, in any direction he may wish to throw them, and he will thus be able to cultivate the corn, no matter how crooked the rows are planted or whether a hill is out of the row. To cultivate high corn the extension-pieces *p* are secured to the standards Q, and the seat U is elevated to the desired height, so as to enable the operator to grasp the handles or upper ends of the extension-pieces *p* to guide the plows N in their lateral motion, they moving in unison owing to the brace *q*, which connects them. The shovels N are then set so as to throw the earth toward the corn, and the rear shovels, O, are changed so as also to throw the earth toward the corn. The corn-plants are then straddled by the hoes N, and the operator guides them in their lateral motion by hand.

If it is desired to have the shovels work independently of each other in cultivating high corn, the connecting-brace *q* is removed, and the operator can place his legs just below the knee-joint into the stirrups *s*, the movable stirrups P having been previously adjusted to the desired height to enable the operator to rest his feet thereon, and the operator in that position can guide the plows N by means of his legs.

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

1. Securing the central pair of cultivator-standards to the plow-beams by means of swivel-hinges for the purpose of admitting them to be moved in a vertical as well as in a lateral direction, substantially as and for the purposes specified.

2. In combination with the laterally-movable standards Q, the adjustable stirrups *r*, substantially as and for the purposes specified.

3. In combination with the laterally-movable standards Q, the extension-pieces *p*, and knee-stirrups *s* for the purpose of enabling the plowman to operate the plows by hand or foot, substantially as and for the purposes specified.

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Witnesses:

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