2 Sheets—Sheet 1.

S. BAILEY.

Cultivator.

No. 211,646. Patented Jan. 28, 1879.

FIG. 1.

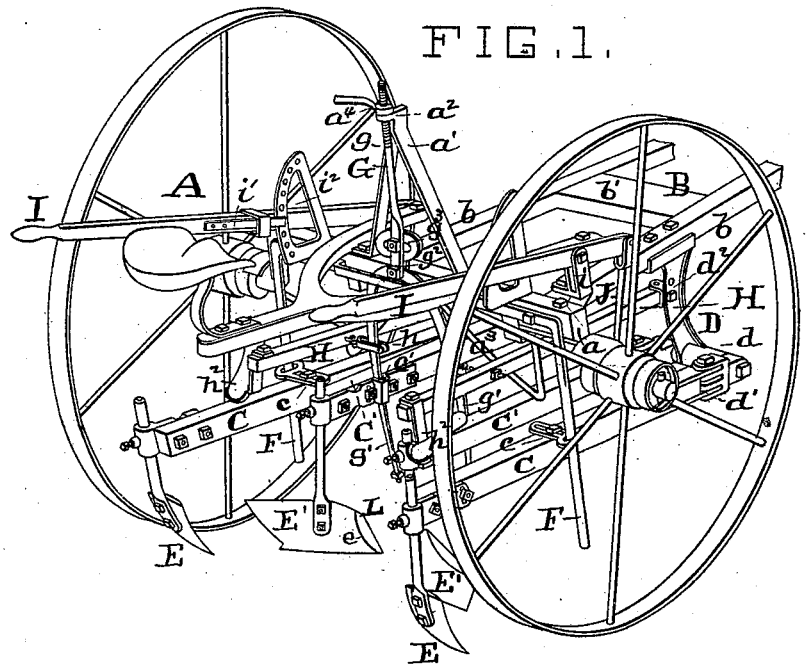
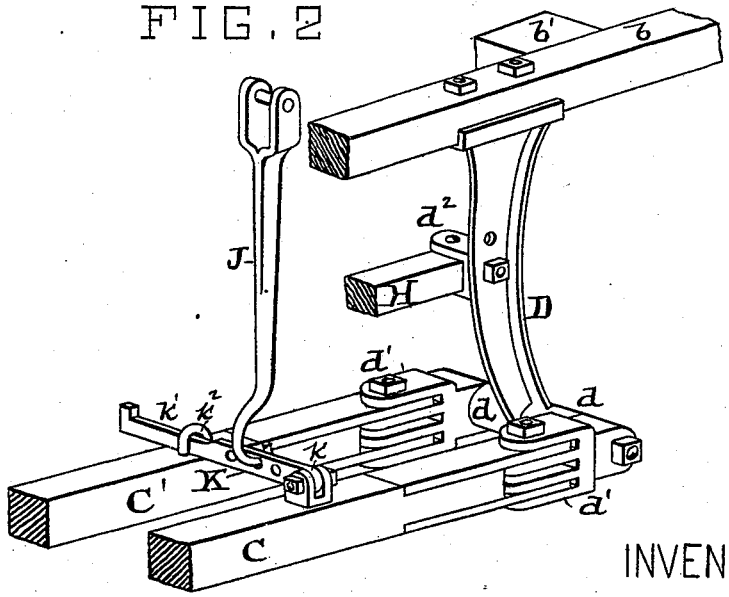


FIG. 2



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2 Sheets—Sheet 2.

S. BAILEY.

Cultivator.

No. 211,646. Patented Jan. 28, 1879.

FIG. 3.

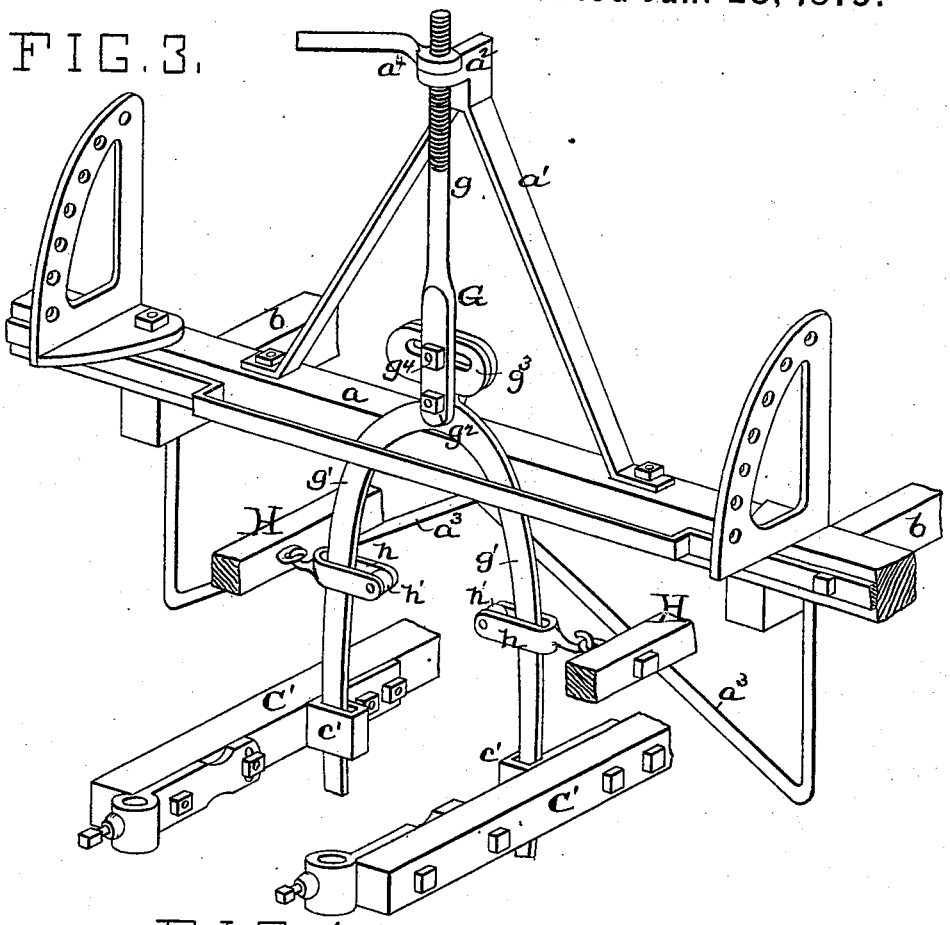
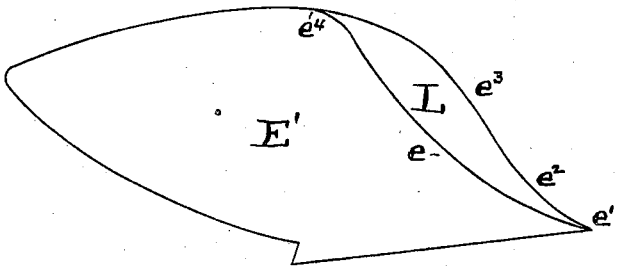


FIG. 4.



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UNITED STATES PATENT OFFICE

STEPHEN BAILEY, OF LEBANON, ILLINOIS.

IMPROVEMENT IN CULTIVATORS.

Specification forming part of Letters Patent No. **211,646**, dated January 28, 1879; application filed November 16, 1878.

To all whom it may concern:

Be it known that I, STEPHEN BAILEY, of Lebanon, St. Clair county, Illinois, have made new and useful Improvements in Cultivators, of which the following is a full, clear, and exact description, reference being had to the annexed drawings, making part of this specification, in which—

Figure 1 is a view in perspective of a cultivator having the improvements; Fig. 2, a detail, being a view in perspective, showing the forward ends of two of the plow-beams, the part to which the beams are jointed, and the device used in lifting them; Fig. 3, a detail, being a view in perspective, showing the parts immediately connected with and employed in effecting the lateral adjustment of the two inner plows; and Fig. 4, a view in perspective of the improved plow.

Like letters of like kind denote the same parts.

The present invention has relation to the means used in effecting the lateral adjustment of the inner plows, to the connection of the plow-beams with the traction-frame, and the device for lifting the plow-beams. It also has reference to various details, more fully hereinafter described.

Referring to the drawing, A represents a cultivator embodying the present improvements. The traction-frame B of the implement extends forward of the axle *a*, consisting of the bars *b b*, which project from the axle, and are at their forward ends connected by the cross-bar *b'*.

C C C' C' represent the plow-beams, the first two being the outer, and the last two being the inner, beams. They are also arranged in pairs, two, C C', on the right-hand side, and two, C C', on the left-hand side, of the implement. The two pairs are respectively connected with the traction-frame by means of two hangers, D D, that are fastened to and depend from the frame B at the forward end of the latter. The beams turn vertically upon bearings *d d*, with which the hangers are provided, and by means of the joints *d' d'* provision is made for the lateral swinging of the beams.

E E E' E' represent the plows, attached, respectively, to the beams C C C' C'. The outer ones, E E, are adjusted laterally to and held in the desired positions by means of the plates *c c*, with which the beams C C are furnished, and which are made laterally adjustable thereon, engaging with the guides F F. The latter project downward from the axle *a*, as shown. This leaves the beams C C free to move vertically, and by moving the plates *c c* suitably across the beams the latter can be set in the desired positions. The inner plows E' E', however, have to be adjusted laterally as the cultivator is moving along. To enable this to be done promptly and easily by the rider the following means are used: G represents a forked arm, supported at its upper end, *g*, upon a standard, a^1, that is upon the axle *a*. The arm is supported so that its lower end can be moved laterally or crosswise to the implement, the preferable mode of support being that shown, where the end *g* is passed through an eye, a^2, upon the standard, and kept from falling by means of a nut, a^4. The arm below forks, the forks g^1 g^1 engaging, respectively, in eyes *c' c'*, with which the beams C' C' are furnished.

The parts thus connected, any lateral movement given the arm G will be imparted accordingly to the beams C' C'. This lateral movement is effected by means of levers H H. The latter, at their forward ends, are pivoted to the hangers D D, at d^2 d^2, and so that the levers can turn up and down and laterally. Toward their rear ends the levers are made to rest upon inclined bearings, (inclining, respectively, each way from the center of the implement,) that are preferably formed by means of the rods a^3 a^3, that are attached to the under side of the axle *a*, as shown. The levers are furnished with clips *h h*, in which the arms g^1 g^1 engage. By depressing one of the levers H—say the left-hand one—that lever is, by means of the inclination of the surface a^3, deflected laterally in its descent along the surface, and, by reason of the connection of the left-hand fork g^1 with the lever and plow-beam, as described, the plow-beam is moved laterally with the lever. At the same time the right-hand lever H, on the other side of the implement, is drawn up the inclined surface a^3 at that side of the implement, causing, in turn, the plow-beam with which it is connected to

move in the same direction laterally and evenly with the left-hand beam. When it is desired to move the plows in the opposite direction, the right-hand lever H is depressed, whereupon the left-hand lever H is drawn up on its inclined bearing a^3, and both plows, E′ E′, are thereby moved toward the right side of the implement. In this way the two inner plows can easily and rapidly be thrown either to the left or right hand, and be made to closely follow the row being cultivated. The clips h h are furnished with rollers h^1 h^1 to relieve the friction as the parts move upon each other.

The levers are operated by the operator pressing his feet upon steps h^2 h^2, with which the levers are furnished. The two parts g^1 g^1 of the arm G are jointed together at g^2, and above the joint, at g^3, they are slotted. This enables the arms g^1 g^1 to be opened apart and closed together for the purpose of properly spacing the plows E′ E′ apart. The arms g^1 g^1 are fastened by a nut, g. By screwing the nut a^3 up or down upon the end g the arm G can be lowered or raised.

The plows are lifted out of the ground by means of the levers I I. The latter are pivoted, at i i, to the traction-frame, and at their forward ends are connected, by the links J J, with arms K K. The latter are attached to the two pairs, C C′ and C C′, of plow-beams, respectively. By depressing the rear ends of the levers I I the beams are lifted.

To provide for the independent movements of the beams C C and C′ C′, the arms K K, at one end, k, are jointed to the beams C C, and at the other end, k^1, are passed loosely through eyes k^2, with which the beams C′ C′ are furnished. The levers I I are fastened in the usual manner, by means of the dogs i^1 engaging in the sectors i^2.

The plow E is preferably provided with a fin, L, arranged and extended upon the edge e of the plow, as follows: Beginning at the point e^1 of the plow, or quite near thereto, the fin curves or widens out very slightly from the edge e until the point e^2 is reached. It thence curves out more sharply until the point e^3 is reached, and at which the fin attains its greatest width; thence it rounds gradually back, running out at the top e^4 of the share, and the whole forming, in effect, a colter that stands out from the forward edge of the share, but in the plane of the land-side of the plow. It serves to cut the ground at the surface, and to throw the dirt and weeds away from the crop, and it enables the plow to be run very closely to the crop.

I am aware that heretofore devices have been used in cultivators for regulating the disthence between the plow-beams, and for providing for their lateral oscillation, and I therefore do not broadly claim such; but

I claim—

1. The combination of the frame B, hanger D, bearings d d, beams C C′, lever I, link J, and arm K, substantially as described.

2. The combination of the beams C C′, arm K, joint k, eye k^2, link J, and lever I, substantially as described.

3. The combination of the axle a, arm G, standard a^1, beams C′ C′, and eyes c' c', substantially as described.

4. The arm G, having the forks g^1 g^1 jointed together at g^2, and provided with the nut g^4, in combination with the beams C C and eyes c' c', substantially as described.

5. The combination of the axle a, bearings a^3 a^3, pivoted levers H H, clips h h, and forked arm G, substantially as described.

6. The combination of the axle a, standard a^1, forked arm G, levers H H, clips h h, beams C′ C′, eyes c' c', and bearings a^3 a^3, substantially as described.

STEPHEN BAILEY.

Witnesses:
JAMES RANKIN,
S. M. BAILEY.