

(No Model.)

H. M. GODFREY.
CULTIVATOR.

No. 386,702.

Patented July 24, 1888.

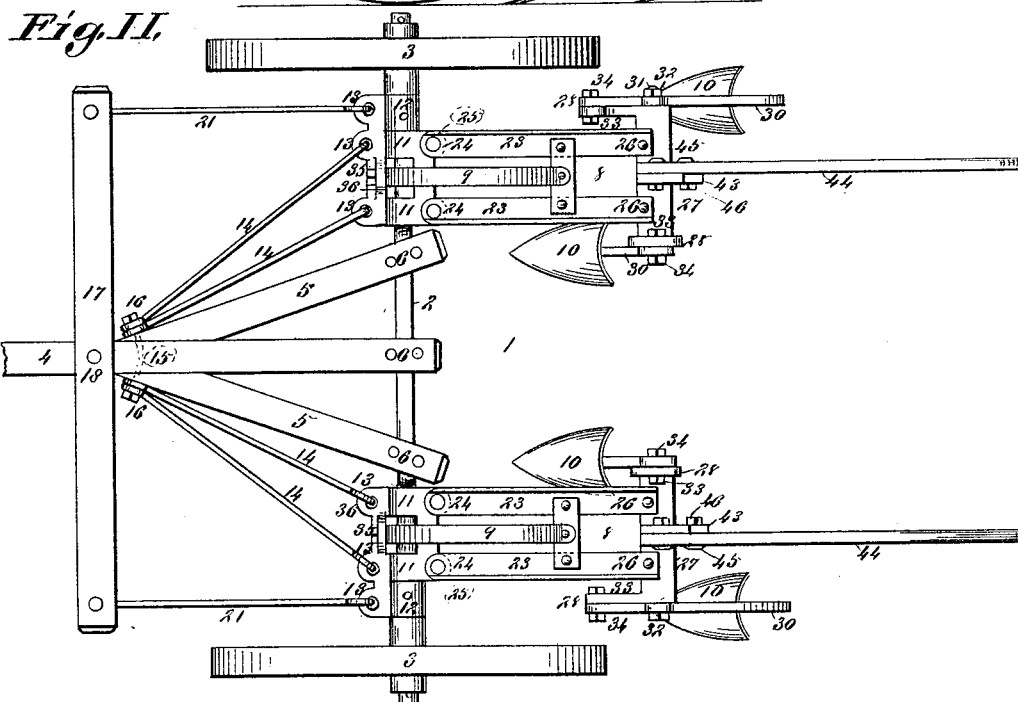
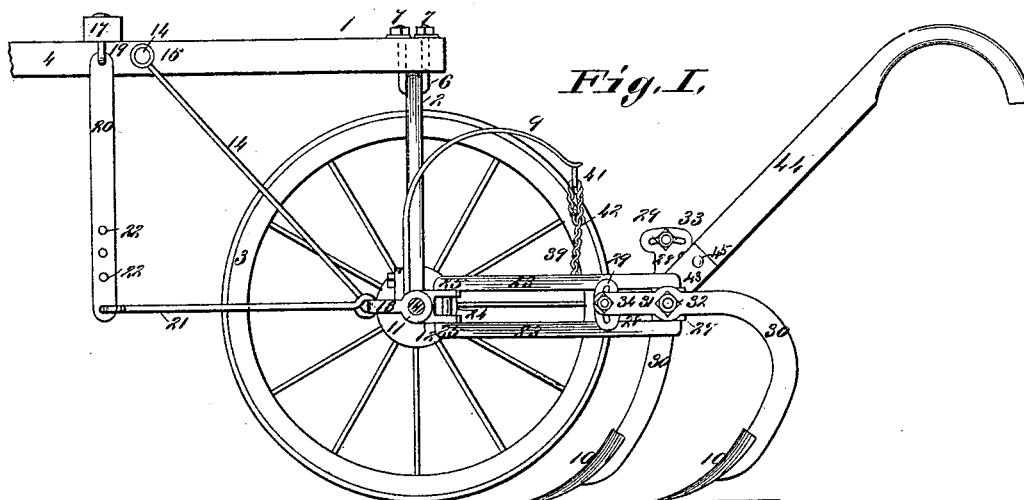
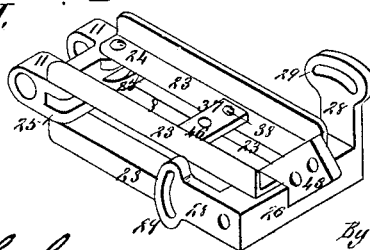


Fig. III.



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CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 386,702, dated July 24, 1888.

Application filed January 9, 1888. Serial No. 260,166. (No model.)

To all whom it may concern:

Be it known that I, HENRY M. GODFREY, of Jonesburg, in the county of Montgomery and State of Missouri, have invented a certain new and useful Improvement in Cultivators, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, and in which—

Figure I is a side view showing the pivotal frame that carries the shovels and its self-adjusting spring-support. Fig. II is a top view of the cultivator, and also shows a view from another standpoint of the pivoted laterally-adjustable shovel-frames and their vertical self-adjustment by the suspension-springs; and Fig. III is a perspective view of the shovel-carrier frame, showing its vertical and lateral means of attachment and the diverse position of its standard-bearer attachments.

The invention relates to that class of devices which provide means of adjustment and self-adjustment of cultivator-shovels, &c., through pivoted and spring-suspended frames that carry the shovels; and the invention consists in features of novelty hereinafter fully described, and pointed out in the claims.

Referring to the drawings, in which similar figures of reference indicate like parts in all the views, 1 represents a cultivator with my improvements attached. 2 is the arch-axle; 3, the wheels; 4, the tongue; 5, the wooden braces between the tongue and axle-arch, to which said braces and the tongue are secured by clips 6, that are fastened by screw-nuts 7.

8 represents the shovel-carrier frame, which is of a compound pivotal construction with a spring suspension, so as to make it both adjustable laterally and vertically under the manipulation of the operator and self-adjusting vertically under the actuation of the spring-bow 9, to enable the shovels 10 to automatically tend to a uniform depth of insertion, and thus in a great measure overcome the tendency to deviations in depth from variations in the surface lay of the land.

11 represents twin journal-clips, that are constructed in pairs and embrace the axle with loose bearings in front of the shovel-carrier frames, which they carry.

12 are draft-clips, that rigidly embrace the

lower level of the axle alongside the journal-clips. These draft-clips have projecting perforated flanges 13, from the two inner ones of which, outside the wooden braces, on each side, two iron brace-rods, 14, extend to near the point ends of the wooden braces, to which and to the tongue they are secured by the curved bolt 15, that passes through the tongue and both sets of braces, and is fastened by the screw-nuts 16.

17 represents the doubletree or evener, which is secured to the tongue by the usual draft-bolt or hammer, 18. The doubletree is provided with clips or eyelet-bolts 19 at each end, from which hang the pendent draft-bars 20, that are connected through perforations at their lower ends by the draft-rods 21 with the perforated flanges 13 of the aforesaid draft-clips 12, that rigidly embrace the axles alongside the twin journal-clips to which the shovel-carrier frame is attached. Perforations 22 are placed at graduated distances on the pendent draft-bar for the attachment of the singletree at the draft inclination required.

The shovel-carrier frames 8 are each of them provided with four longitudinal angle-bars, 23, two of which are hinged above the journal-clips and two beneath to each shovel-carrier frame by the pivot-bolts 24, that in each case pass through the rear flanges, 25, of the clips and the corresponding angle-bars that are each on the same vertical line, so that it will be seen that the angle-bars, that are vertically parallel to each other, are hinged by the same pivot-pins and move in unison with each other. The other ends of the angle-bars are alike correspondingly secured by the pivot-bolts 26, which thus pivot the rear ends of the angle-irons and are secured in the cross-tree-standard bearer 27.

28 represents the slotted yokes that, through their curved slots, provide the means for the adjustment of the upper ends of the standards 30, that carry the shovels aforesaid, 10.

It will be seen that by the eccentric presentation I give to these yokes, one of which is vertical and the other horizontal, and by the corresponding conformation of the standards that carry the shovels, I throw the shovels out of lateral line with each other, as is common with a great number of cultivators, so that

they are free from the danger of choking, which is a frequent occurrence, especially on foul ground with cultivator-shovels that run alongside each other. The standard secured to the horizontal yoke runs at top in a horizontal line, and after reaching back a suitable distance out of lateral line with the other it then curves around downward, conforming to the usual presentation for the right lay of the shovel. The other standard reaches vertically above the cross-tree, also in line with its yoke, and not reaching back, as does the other standard described above. Its position is, in consequence, in advance of the other.

With both standards, the pivotal bolt 31 passes through both standards and through the cross-tree bearer, and is secured by the screw-nut 32. The lay of the shovels is regulated by the pivotal movement of the standards on their common bolt 31, and they are firmly held to said lay by the set-bolt 33 and its screw-nut 34, that secures their set in the curved slots 29 of the yokes.

The bow-springs 9, that provide a flexible suspension to the shovel-carrier frame, are secured at their fast end by the screws 35, that engage in the vertically-projecting lugs 36, that rise from the flange-plates 13. Coupling-bars 37 are secured by screw-bolts or rivets 38 to the adjoining upper angle-bars of each shovel-bearing frame, and chains 39, the fast ends of which are keyed or otherwise secured within the holes 40 in the coupling-bars, have their loose ends rove through the eyelets or loops 41, that hang pendent from the loose end of the bow-springs, and the hooks 42 at the ends of the chain are made to engage in a link of said chain to keep the automatic flexible suspension of the shovel-carrier frame at the right level.

Perforated studs 43 are rigidly secured to the cross-tree-standard bearers and angle upward and back therefrom, and the handles 44 are secured to said studs by the screw-bolts 45 and their nuts 46.

It will be seen that the shovel-carrier frame is free to swing both vertically and laterally, and responds in either direction to the will of the operator under the least movement of the handles, at the same time that the spring aids him in its flexible carriage of the shovels over varying levels on the surface of the ground.

It will also be seen that the pivotal adjustment of the shovel-carrier frame is very materially steadied and braced in its movements by the provision of the four angle-bars to each frame, and by each bar being made to work on its pivots at both ends. Each double pivoted bar not only freely follows the slightest intimations of the movements of the handles, but also they help each other in the regularity of their movements, and are not as readily thrown around by the contact of the shovels with stones, clods, &c., as would be a single shovel-bearer bar with a single pivotal adjustment at one end; also, by the eccentric

position of the yokes and standards that adjust the lay and the position of the shovels they carry, the shovels are placed out of lateral line with each other, so that they cannot foul each other.

The fourfold angle-bars of each carrier-frame, with their compound vertical and lateral adjustability, enable the operator to direct the shovels or plows to a nicety, and to cultivate close to and even around the young plants at the first tending without choking or covering the tender plant, and, also, at the last time or times of tending it enables him to bank up the hills around the mature growth, ready for "laying by," as it is termed, which, if it be a corn-field, is the last work done therein until the cutting up of the corn.

I have shown and described two iron brace-rods besides the wooden braces on each side of the tongue; but, when it is preferred, the outer one of the two iron braces on each side may be dispensed with.

I have also shown and described my improvements as applied to a walking-cultivator; but they may be, and are also intended to be, attached to riding-cultivators, and their means of attachment are exactly similar to those above described.

It being old and well known to provide for parallel motion of a pair of drag-bars, with the resulting effect of presenting the shovels at right angles to the line of travel, whether the bars are in their normal position or swinging to the right or left, I do not claim, broadly, the means for carrying the same into effect; but

I claim as my invention—

1. In a cultivator, the combination of the upwardly and laterally swinging shovel-bearing frames 8, consisting of four angle-bars, 23, journal-clips 11, loosely embracing the main axle of the cultivator and having rearwardly-projecting flanges, pivot-bolts 24, connecting the front ends of the angle-bars to said flanges, cross-tree-standard beams 27, pivot-bolts 26, connecting the rear ends of the angle-bars to said cross-trees, the eccentrically-placed slotted yokes 28, and diverse-shaped standards arranged to carry the shovels out of cross-line with each other, substantially as set forth.

2. In a cultivator, the combination of the journal-clips, the compound pivoted frame carried thereby and providing upward adjustment therefor, said frame having four pivoted angle-bars, the cross-tree-standard bearer to which their rear ends are pivoted, the eccentrically-placed slotted yokes, the screw-bolts 45, adapted in conjunction with the said yokes to set the adjustment of the diverse-shaped standards 30, the arched axle 2, the braces 5, that connect the tongue to the arch of the axle, and the braces 14, that connect said tongue to the lower sections of the axles, substantially as set forth.

3. In a cultivator, the combination of the upwardly and laterally adjustable shovel-

bearing frames constructed with longitudinal angle-bars, the journal-clips to which the latter are pivoted at their front ends, said journal-clips having bearing on the axle, and the cross-tree-standard bearer carrying the rear ends of the angle-bars, the horizontally and vertically presented slotted yokes secured to said cross-trees, and the standards that carry the shovels, one of which on each frame is ver-

tically pendent from the vertical yoke, and the other is carried back at first horizontally from said yoke to carry its shovel out of lateral cross-line with the other shovel, substantially as set forth.

HENRY M. GODFREY.

In presence of—

WM. DYER,

A. H. DRUNERT.