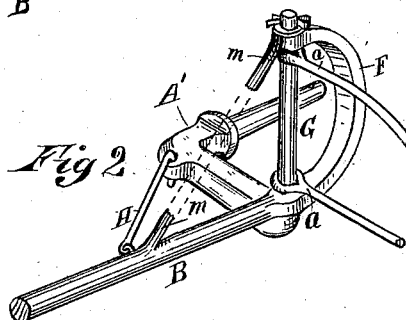
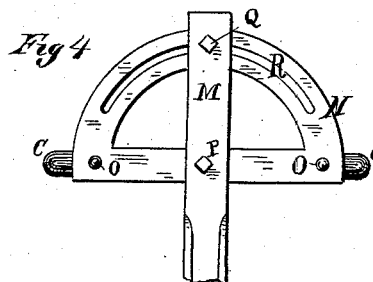
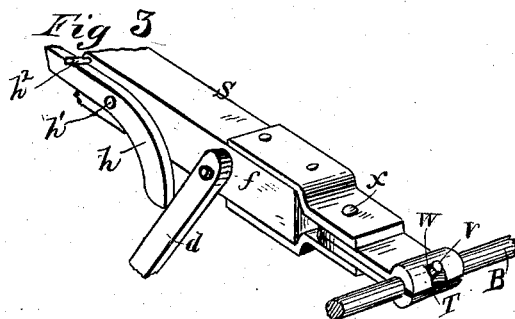
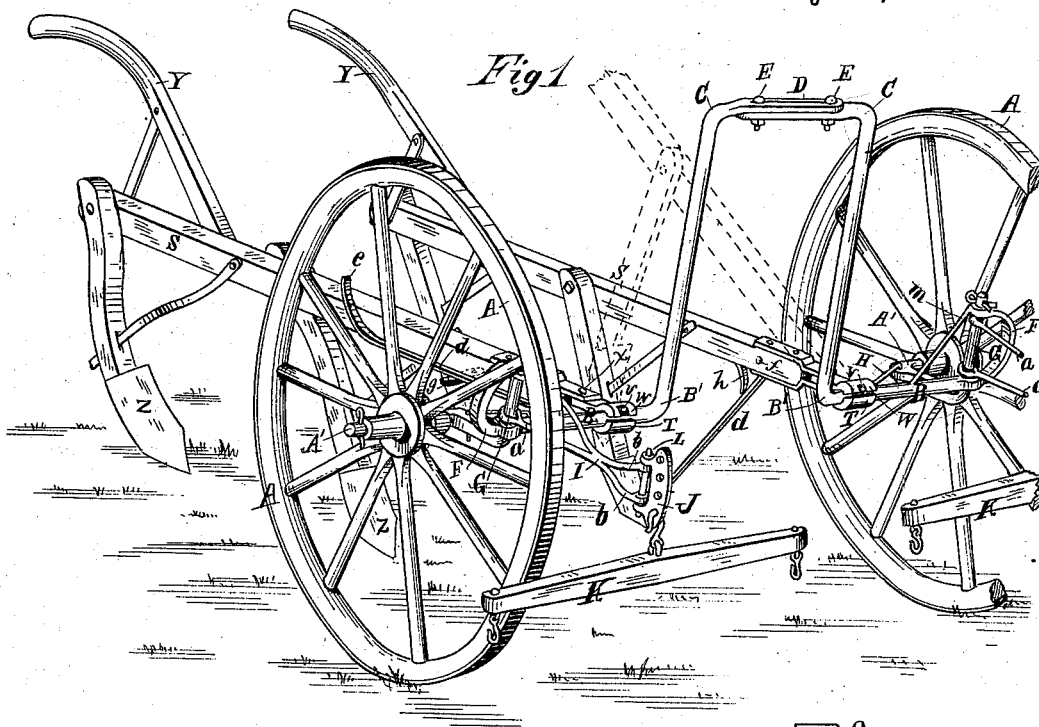


(No Model.)

T. A. LEWIS & G. W. CALL.
CULTIVATOR.

No. 261,738.

Patented July 25, 1882.



WITNESSES:

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UNITED STATES PATENT OFFICE.

THOMAS A. LEWIS AND GEORGE W. CALL, OF URBANA, ILLINOIS.

CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 261,738, dated July 25, 1882.

Application filed April 5, 1882. (No model.)

To all whom it may concern:

Be it known that we, THOMAS A. LEWIS and GEORGE W. CALL, of Urbana, in the county of Champaign and State of Illinois, have invented certain new and useful Improvements in Cultivators, of which the following is a full, clear, and exact description.

This invention consists of improvements in two-wheel cultivators, whereby it is designed to so construct them that they may be used with or without a tongue, as the nature of the work may require, the construction being such that when a tongue is used the cultivator may be guided independently of the tongue, as is desirable in some cases. It is also designed to connect the wheels to the axle by caster-wheel contrivances, by which the wheels have facility of lateral divergence, allowing the axle having the cultivator-beams attached to maintain its proper rectangular relation to the beams. It is also designed to provide simple and efficient means of adjusting the cultivators toward or from each other by an extension device of the axle; also, means to regulate the depth to which the cultivators work by a cranked contrivance of the axle; also, means to support the cultivator-plows above ground for transportation, all as hereinafter described.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective view of our improved cultivator with one of the beams represented by dotted lines in the elevated position for passing over ground. Fig. 2 is a detail of the caster-wheel, cranked axle, and hitching attachment in perspective view. Fig. 3 is a detail of the beam attachment to the axle and the beam-supporting devices in perspective view, and Fig. 4 is a detail of the tongue attachment in plan view.

The wheels A have independent cranked axles A', coupled by a shaft, B, constructed in two parts, bent upward at B' and horizontally at C to form an arch to pass over the growing corn, and with overlapping slotted parts D to form an extension-joint by bolts E. The outer ends of the shaft B have an upward return-bend, F, with eyes for the vertical pivot-stem G of the cranked axles A', making caster-

wheel connections of each wheel independently of the other, to be used as such when required, but provided with detachable hook-braces H, by which to lock the axles and make them rigid when required.

The horses are hitched singly to the cultivator by these pivot-stems G, so as to draw directly from the wheels, independently of the shaft, the connection being by the vertically-branching links I engaging the pivot-stems, top and bottom, by their respective branches 'a a, and similarly connecting with the clevises J by branches 'b b and pin L, to which clevises the single-trees K are attached, so that there is full lateral pivotal vibration, but none vertically. By this method of hitching on the horses it will be seen that the machine is subject to the draft of the horses for guidance independently of a tongue, which is desirable because of the severe lateral thrusts of the tongue against the horses by the uneven ground in the use of the common tongue-cultivators, which it is sought by this contrivance to avoid. A tongue, M, will, however, be used for guiding the machine along the road, and more particularly for maintaining the upright position of the arch, the tongue being connected to the top of the arch by the D-plate N, made fast to the arch by bolts O, or, if desired, by the bolts E, to which plate N the tongue is pivoted at P, with a guide-stud, Q, traversing the curved slot R in the plate, making the connection positive so far as resisting vibration in the vertical plane is concerned.

The cultivator-beams S are attached to the shaft B by clamps T, which clip around them rigidly, except a little oscillation allowed to the shaft, limited by the stud V, for which one of the parts of the clamps is notched, as at W, to allow of the necessary oscillations of the shaft in use, but to prevent the arch from swinging down when not held up by the tongue nor maintained in the upright position by the draft. The clamps T are pivoted to the plow-beams at X to allow the beams to be swung to the right or left by the handles Y for guiding the plows Z, also to allow the wheels to swing as the direction of the course varies.

To support the plows above ground, as represented in dotted lines, Fig. 1, a bar, d, with

a runner-shaped end, *e*, is pivoted to each beam at *f*, near the front end, and supported on the side by a button, *g*, so as to serve as rub-irons to the wheels when the plows are at work, 5 which runner-bars, being released from their supporting-buttons *g* and let fall when the cultivators are to be elevated, will be held in proper position to support the beams by the 10 braces *h*, which are pivoted at *h'* to the beams *S*, and held in bracing position by the stop-pins *h²*, fixed in the beams, as clearly represented in Fig. 3, in which position of the parts the beams will be raised to cause the plows to be 15 lifted from the ground for convenience in moving the machine from place to place. When the plows are to be lowered to working position the braces *h* are swung away from the pin *h²* sufficiently to permit the bars *d* to be 20 raised at the sides of the beams *S*, where they may be supported by swinging the buttons *g* beneath them, as in Fig. 1.

The working-depth of the cultivator-plows is regulated by the draft on the clevises *J*, according as the single-trees *K* are hitched 25 higher or lower in them.

The shaft *B B'* is braced from the top of return-bends *F* toward the arch, as shown at *m* in Figs. 1 and 2.

Having thus fully described our invention, we claim as new and desire to secure by Letters Patent—

1. The combination, with a shaft, *B*, having return-bends *F*, of the independent right-angled crank-axles *A'*, having vertical pivots *G*, passing through eyes in the bend *F*, 35 and connected at the vertex of the right angle with the shaft by hook-braces *H*, whereby the draft may be applied, as described.

2. The combination, with plow-beams having pins *h²*, of the bars *d e* and braces *h*, each 40 pivoted to the beams, as and for the purpose specified.

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Witnesses:

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