J. LACEY.

Wheel-Cultivator.

No. 48,627. Patented July 4, 1865.

Fig. 2.

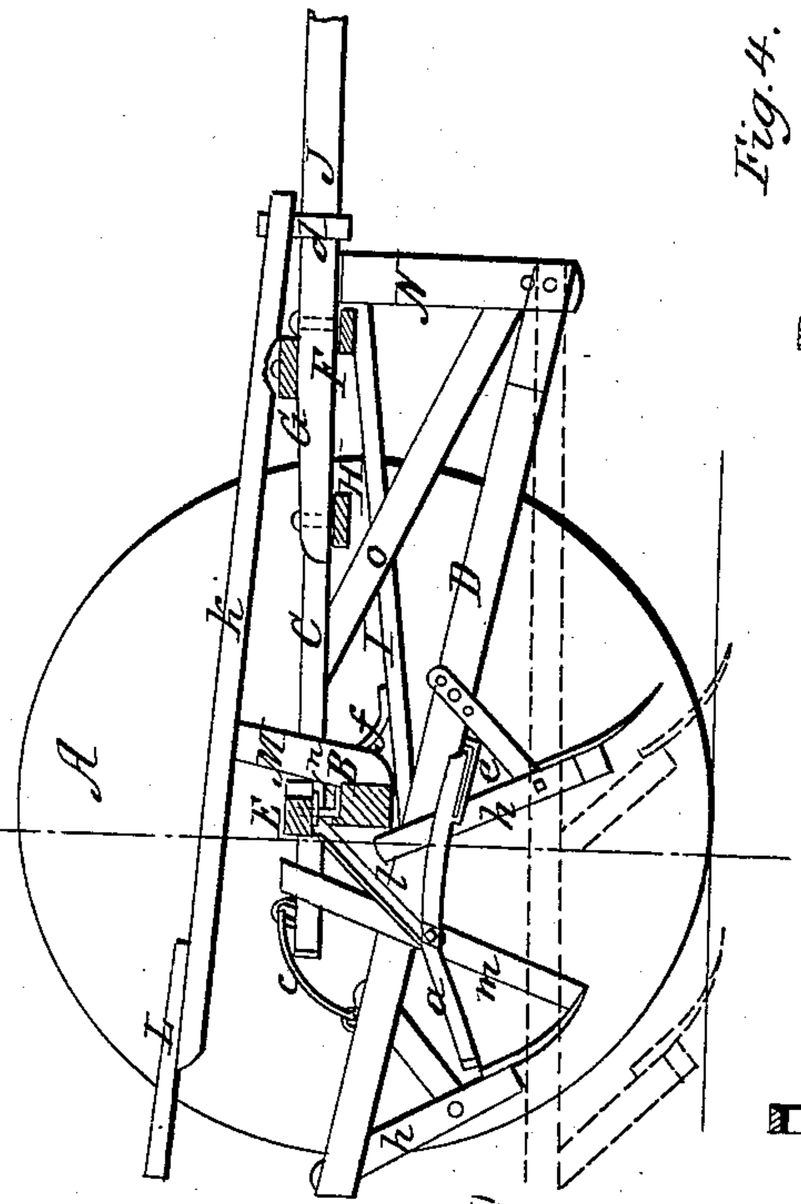


Fig. 4.

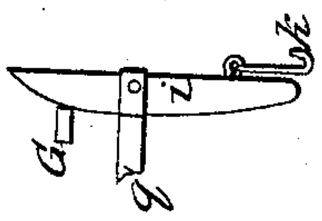


Fig. 3.

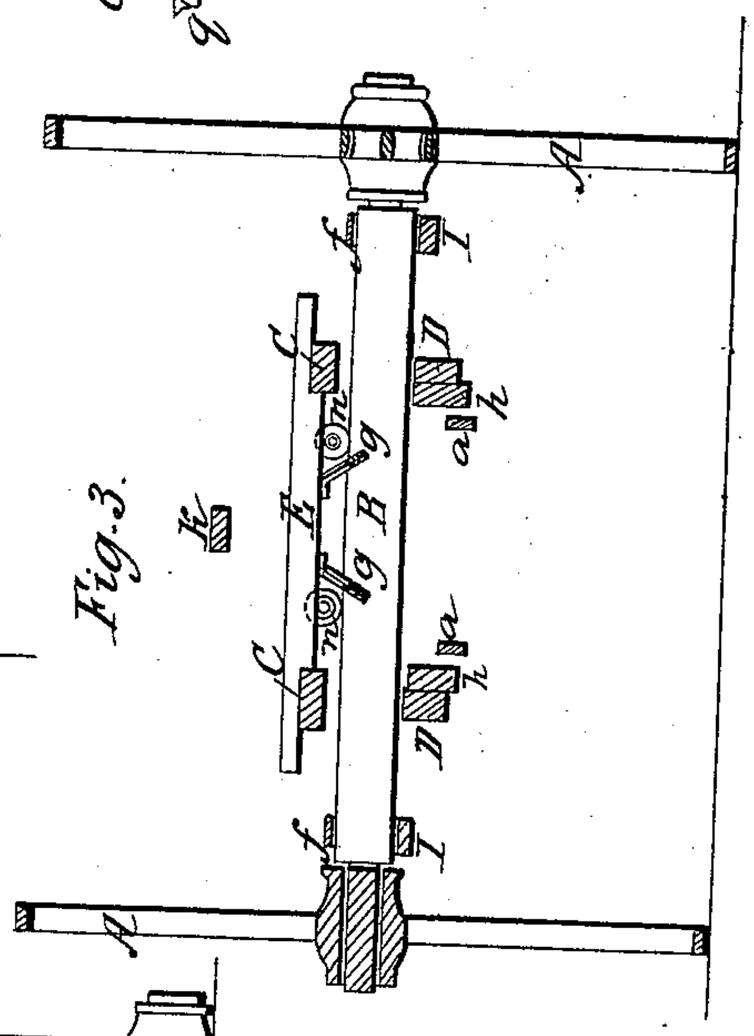
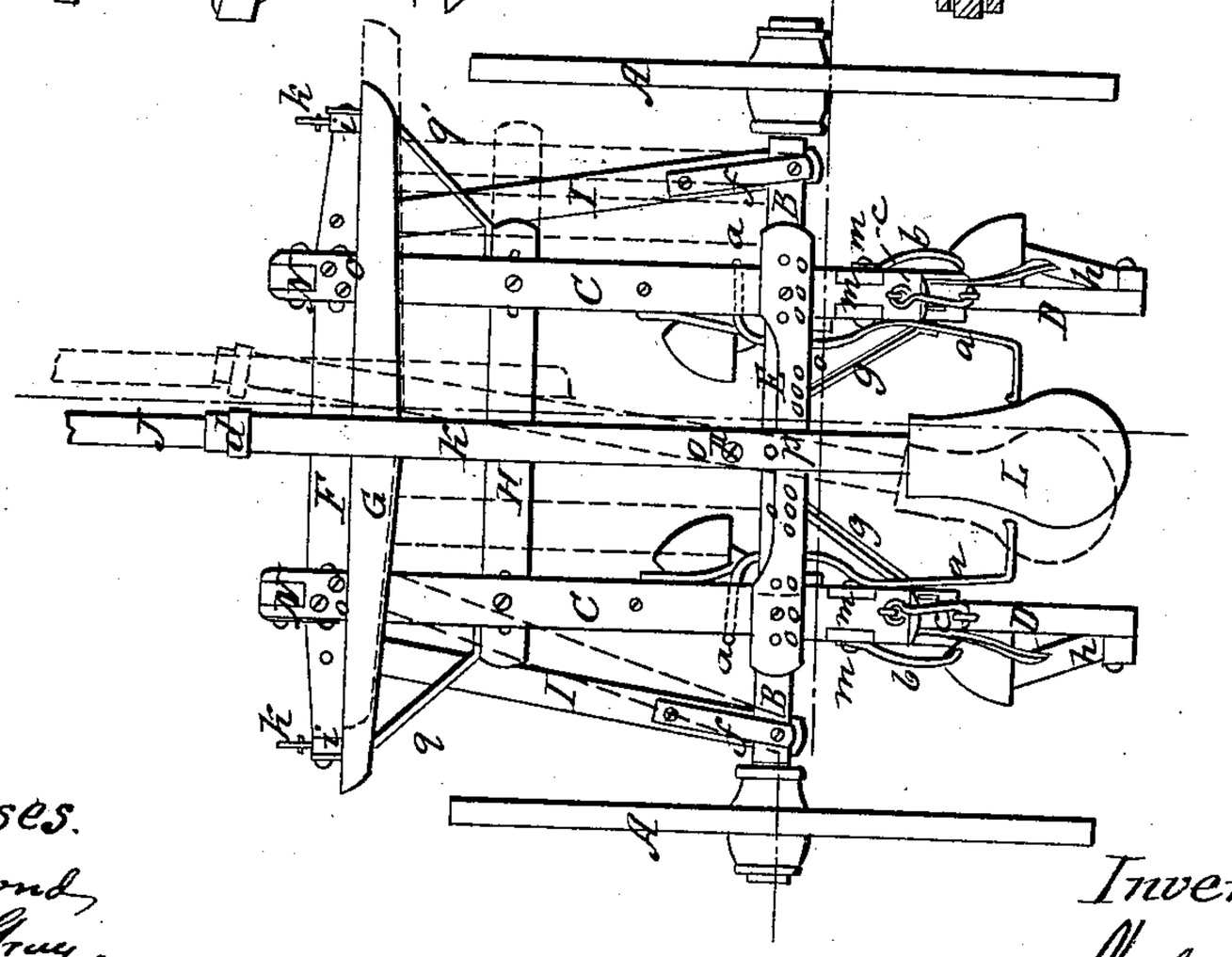


Fig. 1.



Witnesses.
L. L. Bond
Geo. W. Gray.

Inventor.
John Lacy

UNITED STATES PATENT OFFICE.

JOHN LACEY, OF CHICAGO, ILLINOIS, ASSIGNOR TO CONRAD FURST AND DAVID BRADLEY, OF SAME PLACE.

IMPROVEMENT IN CULTIVATORS.

Specification forming part of Letters Patent No. **48,627**, dated July 4, 1865.

To all whom it may concern:

Be it known that I, JOHN LACEY, of the city of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Cultivators, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a top view; Fig. 2, a longitudinal section; Fig. 3, a transverse section; and Fig. 4, a detached section or portion, showing the arrangement for draft.

Like letters refer to similar parts in all of the figures.

The nature of my invention consists in constructing and arranging swinging bars to connect the movable parts of a cultivator with the axle, and in pivoting the seat on or above the axle, so as to make the reaction on the seat move the machine in the same direction as the force applied by the foot moves it, and make them correspond in effect.

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

I construct a movable frame composed of the beams and cross-bars C C, E, H, and F, which is about four feet in length and about two feet four inches in width, and of sufficient size and strength to perform the service required. This frame is adjustable in width by means of the bolts or pins and holes *o*. At the front ends of the beams C, I attach the pendants N, which are supported by the braces O. At the rear ends of the beams C, I attach the stirrups *m*. The cross-beam F projects beyond the frame on both sides, and into these projections I pivot the swinging bars or rods I. These bars extend back and are pivoted to the axle B near the wheel-hubs, the pivotal points being wider at the axle than at the beam F, as shown in Fig. 1. The object of this is to produce a greater change in the line of draft of the wheels when the movable parts are thrown to one side, the bar on that side being thrown from its inclined position to one parallel with the beam C, while the incline of the opposite one is increased, which so changes the line of draft that the operation of the wheels will carry the whole machine in the same direction as the movable parts are thrown. By placing them in this position I am also enabled to cultivate corn successfully on side hills, for by moving the movable parts on the uphill side of the center of the machine the position of the wheels counteracts the natural tendency to work down toward the foot of the hill. By the use of these swinging bars or rods I am able to simplify the construction of the cultivator, as all extra frame-work is dispensed with and the movable parts connected directly with the axle without any other attachment. This latter effect may be produced with chains. The frame rests upon the axle loosely, so that I obtain freedom of action in all of the parts, and move the machine sidewise without obstruction other than that presented by the soil, and almost without friction of any kind.

I attach the driver's seat L to the lever K at or near its rear end, and pivot the lever K to the post or block M, which said post is attached to the axle at or near the center, and in such a manner as not to interfere with the operation of the movable parts. The front end of the lever K is pivoted to the draft-pole J by the band *d*, or by any other suitable device, and the point of attachment is not material, as it may be attached as shown, or attached to the rear end of the draft-pole, or placed under the cross-bar H. By this arrangement of the seat and lever I accomplish two very important objects, as I relieve the movable parts from the weight of the driver and in a measure balance them, and by the use of the holes *p* I can regulate this balance and adjust it properly, so that when the driver is seated the movable parts securely rest upon the axle, in the side movements of the machine. I also cause, by means of this lever, the reaction of the force applied by the foot to operate in the same direction as the primary force, for when the operator moves the machine in either direction by the foot the effect of that operation upon the lever K will be to move the machine in the same direction, so that there is no loss of power. These movements, combined with the turn of the whole machine by changing the line of draft on the axle, as hereinbefore set forth, not only enable

the operator to avoid tearing up such hills of corn as are out of the line of the row, but enable him to follow a long crook or curve in the row without running the machine upon it. This arrangement also gives the operator perfect control over the movements of the cultivator, and it can be moved more easily than it could if not mounted on wheels, and with more certainty.

The foot-rests V are attached to the stirrups *m*, so as to be moved up or down and accommodated to the size of the driver. These foot-rests, or the ends of the beams C, can be used in moving the machine sidewise. The stirrups *m* are braced to the cross-bar E by the braces *g*, and at the point of intersection of these braces with the stirrups I pivot the treadles *a*, which are used for throwing the plows out of the ground. The plows are held out of the ground by means of the hooks *c*, which are attached to the plow-beams D and placed in staples at the rear ends of the beams C. The plow-beams D are pivoted to the lower ends of the pendants N, and extend back, passing through the stirrups *m*. The plows *h* are attached to this beam in the usual manner.

The draft-pole J is attached to the cross-beams H and F, and does not extend back to the axle. The draft arrangement consists of the double-tree G, uprights *i*, Fig. 4, which rest against the front of the double-tree G, and are pivoted to the end of the cross-beam F by a bolt running through the end of the braces *g'*. Whiffle-trees are attached to these uprights by the hooks K. Under the cross-beam E, I have placed two friction-rollers, *n*, Fig. 3; but the machine works about as well without as with them, as there is but very little friction at this point when the driver is mounted, thus forming, when complete, a cultivator which I believe is unsurpassed in its strength, harmony of action in all of its parts, and the ease of its operation in the field.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. Connecting the movable parts of a mounted cultivator with the wheels and axle by the horizontal swinging bars or rods I, substantially as shown and specified.

2. Pivoting the seat-lever K to the axle by means of the post M, or its equivalent, and to the movable parts of the cultivator, so as to adjust the weight of such movable parts and cause the reaction of the force applied to move them to operate in the same direction as the direct force, all being substantially arranged and constructed as and for the purposes set forth and specified.

JOHN LACEY.

Witnesses:
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