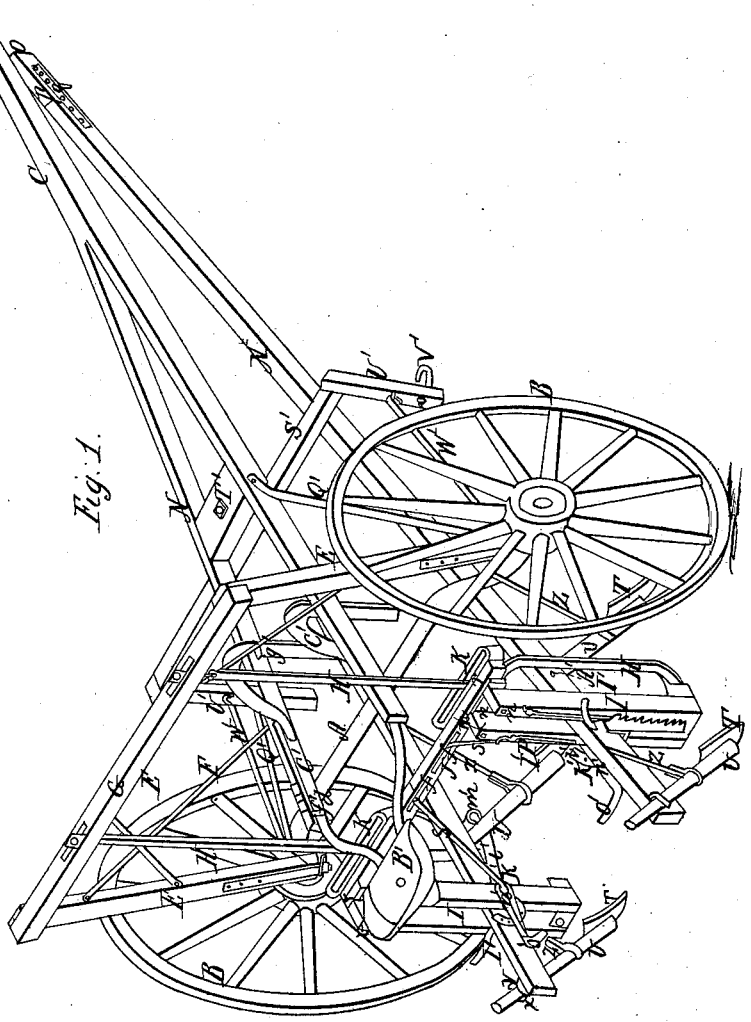
Sheet 1-2 Sheets.

# H. M. Rose.

## Cultivator.

No. 111,256. Patented Jan. 24, 1871.

Fig. 1.



Witnesses;

C. H. Frost

H. A. Penney

Inventor;

H. Martin Rose.

By Farnell, Ellsworth & Co.

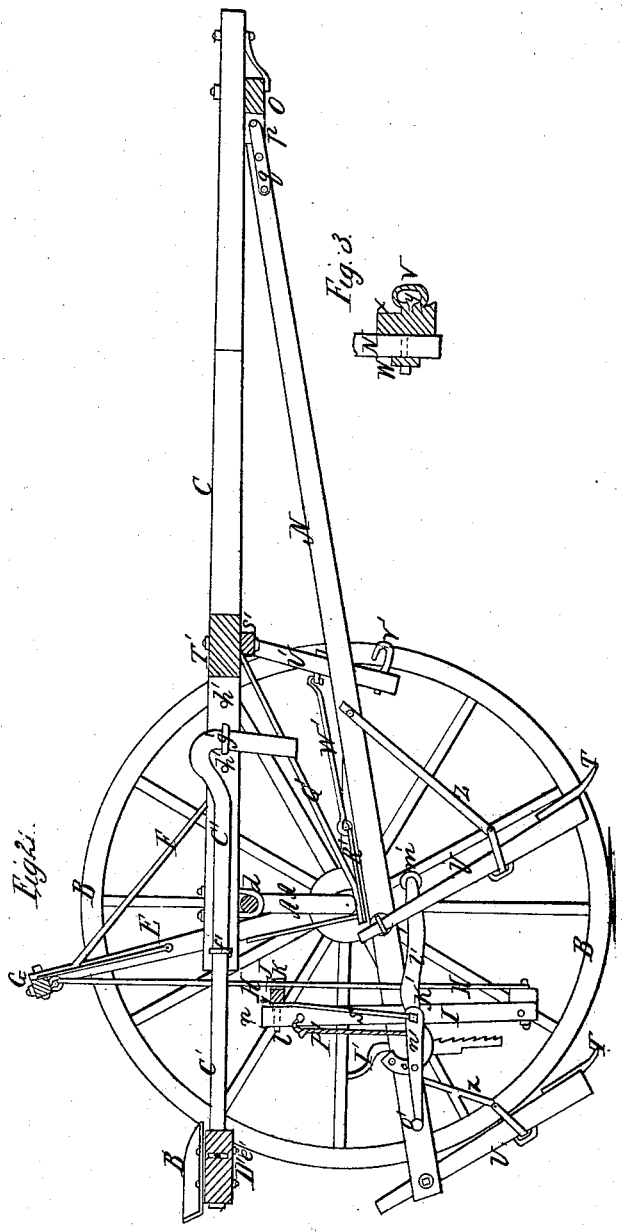
Attorneys.

Sheet 2-2 Sheets.

# H. M. Rose.

## Cultivator.

No. 111,256. Patented Jan. 24, 1871.




Witnesses;
G. H. Frost
H. A. Ramey

Inventor;
H. Martin Rose.
By Farnell Ellsworth & Co.
Attorneys.

# United States Patent Office.

H. MURTIN ROSE, OF CLINTON, ILLINOIS.

Letters Patent, No. 111,256, dated January 24, 1871.

## IMPROVEMENT IN CULTIVATORS.

The Schedule referred to in these Letters Patent and making part of the same.

*To all whom it may concern:*

Be it known that I, H. MURTIN ROSE, of Clinton, in the county of De Kalb and State of Illinois, have invented a new and improved Cultivator; and I do hereby declare the following to be a full, clear, and exact description thereof, which will enable others skilled in the art to which my invention appertains to make and use the same, reference being had to the accompanying drawing forming part of this specification.

Figure 1, sheet 1, is a perspective view of my improved cultivator.

Figure 2, sheet 2, is a central longitudinal section of the same.

Figure 3, sheet 2, is a detached sectional view of parts to be hereinafter referred to.

Similar letters of reference indicate corresponding parts in the several figures of the drawing.

My invention has for its object to improve the construction of cultivators, whereby the same are rendered more efficient in their operation.

The invention consists—

First, in constructing the tongue with a bifurcated end attached to the axle, to receive the seat-arms and permit an unobstructed view of the plants from the driver's seat during cultivation.

It also consists in the provision of means for adjusting the driver's seat upon the seat-arms for the purpose of adapting the former to the most convenient and easy positions for the driver.

It also consists in suspending the operating parts of a cultivator beneath the axle from a frame which is mounted upon said axle by means of pivoted adjustable bars, whereby the plow-beams are allowed an increased lateral play and adjustment and an increased vertical movement when the plows are raised out of the ground, and whereby the parts are adapted for operation with the utmost ease and efficiency.

It also consists in the combination of the various parts by which these results are obtained.

It also consists in the provision of means for accommodating the angle of the frames which guide the plow-beams to the various adjustments of the plows between the rows of plants to be cultivated, whereby the plow-beams are permitted a free and easy vertical play within the frames without binding.

It also consists in the provision of means for adjusting the position of the plows to throw the dirt nearer to or farther from the plants during cultivation.

It also consists in the construction and operation of the foot-levers and horns by which the plows are operated and thrown out of operation by the feet of the driver.

It also consists in the method of connecting the front ends of the plow-beams to the draft-pole, to permit their vertical and lateral play.

In the accompanying drawing—

A is the bent axle, supported upon wheels B in the usual manner. Each bend of the axle, instead of forming an angle, is made to describe the arc of a circle, for the purpose of preventing the fiber of the iron from being broken, and thereby weakening the axle.

C is the tongue or draft-pole, having its rear end bifurcated and secured to the upper side of the axle by means of metallic eyes and nuts *d*, or by any other suitable means.

E is a quadrangular or rectangular frame, rising above the axle and inclined somewhat toward the rear of the machine.

It is supported upon the axle immediately within the wheels, and is braced from the tongue by short bars or rods F.

The upper or cross-bar G of this frame is provided with vertical slots, in which the upper ends of the bent metallic bars H are adjustably suspended by any suitable jointed or flexible connection.

As the frame E is inclined somewhat to the rear of the machine, the bent bars H drop behind the axle, and are pivoted at their lower ends to the lower ends of small rectangular wooden frames, I, placed in upright positions for the reception of the plow-beams, and whose upper ends are suspended from a horizontal slotted bar or beam, J, in the following manner:

K are short loops or slatted bars placed upon the front side of the bar J, at each end, and provided with bolts *l*, which pass laterally through slots *m* formed in the ends of the bar J, and are secured to the frame J by means of burs *n*, as shown.

By this arrangement the rectangular plow-beam frames are suspended from the cross-bar of the frame E, but held in an upright position by means of the horizontal bar J.

The loops K permit the lateral play of the frames I, so that the plows may be guided nearer to or farther from the plants to be cultivated.

N are the plow-beams, passing through the rectangular frames I, and extending in converging lines to the front of the machine, where they are secured to a block, *o*, upon the under side of the draft-pole in front of the bifurcation of the latter.

This block is provided with two short arms, *p*, to which the plow-beams are connected by means of metallic plates, *q*, in such a manner as to permit of ready vertical movement, while the block itself is pivoted to the under side of the pole to admit of the lateral motion of the plow-beams when the plows are in operation.

The plates *q* are so connected to the pivoted blocks

and plow-beams as to permit the lateral adjustment of the plows to accommodate the varying distances between the rows of plants to be cultivated.

Inasmuch as the angle described by the forward ends of the plow-beams varies in proportion to the adjustment of the plows between the rows of plants, it is necessary that the rectangular frames I be placed laterally at such an angle upon the bar J as to permit the vertical play of the plow-beams without binding between the side bars of said frame.

To accomplish this result wedges *r* are introduced between the upper ends of the frames and the bar J.

S are braces extending from the proximate sides of the frames I to about the center of the bar J, where they are secured, by bolts and nuts, within slots *f*, formed in said bar.

To effect the lateral adjustment of the plows, the frames I and loops K are moved upon the bar J by loosening the bolts *l*, the braces S being also adjusted at the same time.

The pendent bars H are also adjusted upon the frame E to admit of the full lateral play of the plows, or, in other words, to allow the bars to move through the entire length of the loops K, and thus permit the full lateral play of the plows.

T are the plows, affixed to standards U in the usual manner.

The upper ends of the standards are secured to the plow-beams by means of the eye-bolts V and nuts W, shown in fig. 3.

Between the beams and the standards of each plow a beveled recessed block, X, is placed, through which the shank of the eye-bolt passes.

The inclination of this block, as it is turned upon the eye-bolt, adjusts the angle given to the plow to throw the dirt nearer to or farther from the plants.

The recess upon its face serves to prevent the eye of the bolt from opening and allowing the standard to drop out. This would be the result without the recessed block, from the fact that the eye, in order to save the expense and labor of welding, is not formed continuously upon the bolt, but by bending the latter upon itself and leaving the bent end disconnected from the main portion, as shown at *y*, fig. 3.

The plow-standards are braced from the beams by means of the braces Z in the usual manner.

To prevent the guide-frames I from moving forward toward the axle, blocks A′ are secured to the plow-beams in front of the frames.

Friction-wheels may be substituted for the blocks, if desired, to prevent the frames from obstructing the play of the plow-beams.

B′ is the driver's seat, and

C′ are the arms by which the same is supported upon the machine.

These arms are formed of a single piece of metal, doubled upon itself in such a manner as to receive between them, at the point of bending, the block D′, which is firmly secured to the under side of the seat.

This block is pivoted at its rear end between the arms, and its forward end is slotted for the passage of a bolt, *e′*, by which means the position of the seat is adjusted for the comfort and convenience of the driver.

The seat-arms C′ extend along the proximate surfaces of the draft-pole arms, passing through loops *f′* affixed to the latter, and their forward ends are bent upward and downward to form segmental guides, which pass through loops or staples *g′* secured to the draft-pole.

By moving these segmental guide-arms up or down within the staples the position of the seat with relation to the plows is adjusted.

The seat-arms are adapted for adjustment longitudinally upon the draft-pole to balance the frame of the machine upon the axle under the weight of the driver.

This is accomplished by shifting the staples *g′* into one or the other of the series of holes *h′* formed in the draft-pole arms, and sliding the seat-arms through the loops *f′* to correspond thereto.

By this arrangement of the seat-arms and draft-pole the driver is permitted an unobstructed view, between the plows, of the plants to be cultivated.

If preferable the seat-arms may be formed of two pieces of metal instead of one piece, bolted or otherwise secured together to receive the seat-block.

I′ are horns affixed to the outside of the plow-beams, within reach of the driver's feet, whereby he is enabled to guide the plows during the operation of cultivating.

The shanks of the horns are notched upon one edge to catch upon staples affixed to the plow-beams, and are held in place by keys *j′*, as shown.

By this means the horns are adapted for vertical adjustment, so that they may at all times be within reach of the driver's feet.

K′ are the levers, by which the plow-beams are raised to lift the plows out of the ground.

They are each constructed in two parts, and pivoted to the proximate sides of the guide-frames I by means of the bolts which connect the braces S to said frames.

The under part *i′* is provided with a friction-roller, *m′*, extending under the plow-beam, and the part *n′* with a foot-rest, *o′*, and with a lateral pin which is adapted to engage with a perforated segment upon the rear end of the part *i′*.

By changing this pin into one or the other of the holes in the segment the foot-rest is brought within reach of the driver's foot.

The rollers *m′* are designed to reduce the friction upon the plow-beams when the levers are depressed to lift the plows out of the ground.

The plow-beams are suspended within the guide-frames by means of looped chains P′, which admit of the beams being raised, but prevent their dropping down too far within the frames.

Q′ are braces extending from the draft-pole to the short plates R′ upon the bottom of the uprights of frame E, and serve to hold the draft-pole more firmly in place upon the axle.

S′ is the draft-bar, pivoted to the under side of the tongue, or to a block, T′, secured to the latter, and is provided at its end with the pivoted pendent bars U′, to which the whiffle-tree hooks V′ are attached.

W′ are draft-rods hinged to the pendent bars, between their upper ends and the hooks V′, and also hinged at their opposite ends to the plates R′.

By this construction a jointed draft-bar is produced which not only equalizes the draft of the team, but carries the line of draft below the tongue and nearer to the plows.

The pendent bars swing upon their pivots and their lower ends are drawn forward and back, according to the draft of the team.

Having thus described my invention,

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

1. The combination of the seat and its adjustable arms C′ with the bifurcated end of the tongue C, substantially as described, for the purpose specified.

2. The combination of the slotted block D′ with the driver's seat B′ and the seat-arms C′, for the purpose specified.

3. The plows and beams of a wheel-cultivator suspended beneath the axle from the upright frame E, mounted thereon by means of the bent adjustable

bars H and adjustable frame I, substantially as herein shown and described.

4. In combination with the adjustable pendent bars H and plow beams, the adjustable frames I, slotted bar J, and adjustable loops K, substantially as described, for the purpose specified.

5. In combination with the adjustable frames I and slotted bar J, the wedges *r*, substantially as described, for the purpose specified.

6. The beveled recessed blocks X and eye-bolts V, constructed as described, and applied to the beams and standards in the manner herein set forth and shown, for the purpose specified.

7. The foot-horns I′, constructed as described, and adapted for adjustment upon the plow-beams in the manner set forth, for the purpose specified.

8. The jointed adjustable levers K′, constructed as described, and provided with the friction-rollers *m*′, in combination with the guide-frames I and plow-beams, substantially as and for the purpose specified.

9. The plow-beams, when connected at their forward ends to the draft-pole by means of the pivoted plates *q* and pivoted block O, substantially as described, for the purpose specified.

H. M. ROSE.

Witnesses:
G. H. FROST,
D. J. POWERS.