J. S. JOHNSTON & C. A. JOHNSON.

Cultivator.

No. 198,624. Patented Dec. 25, 1877.

*Fig. 1.*

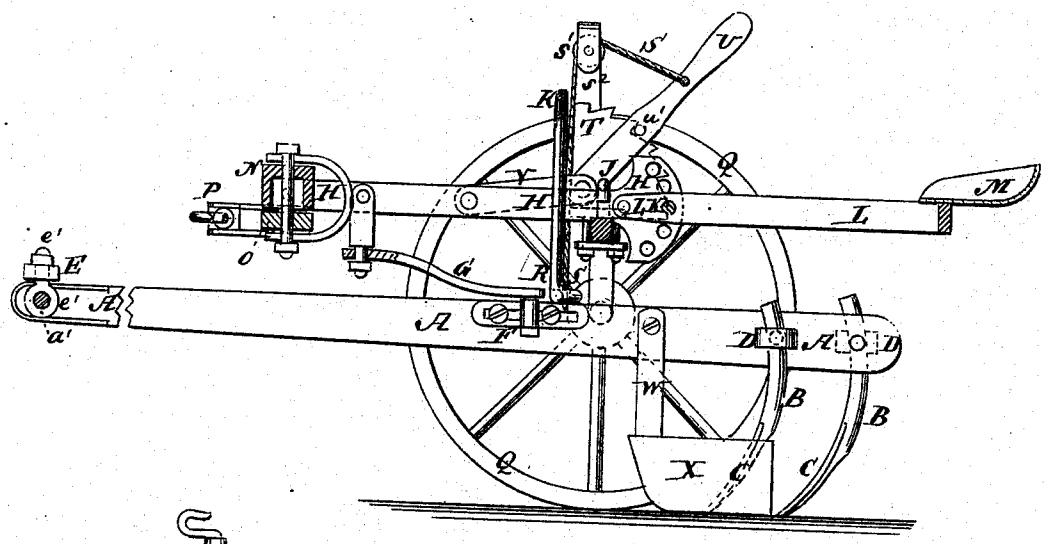
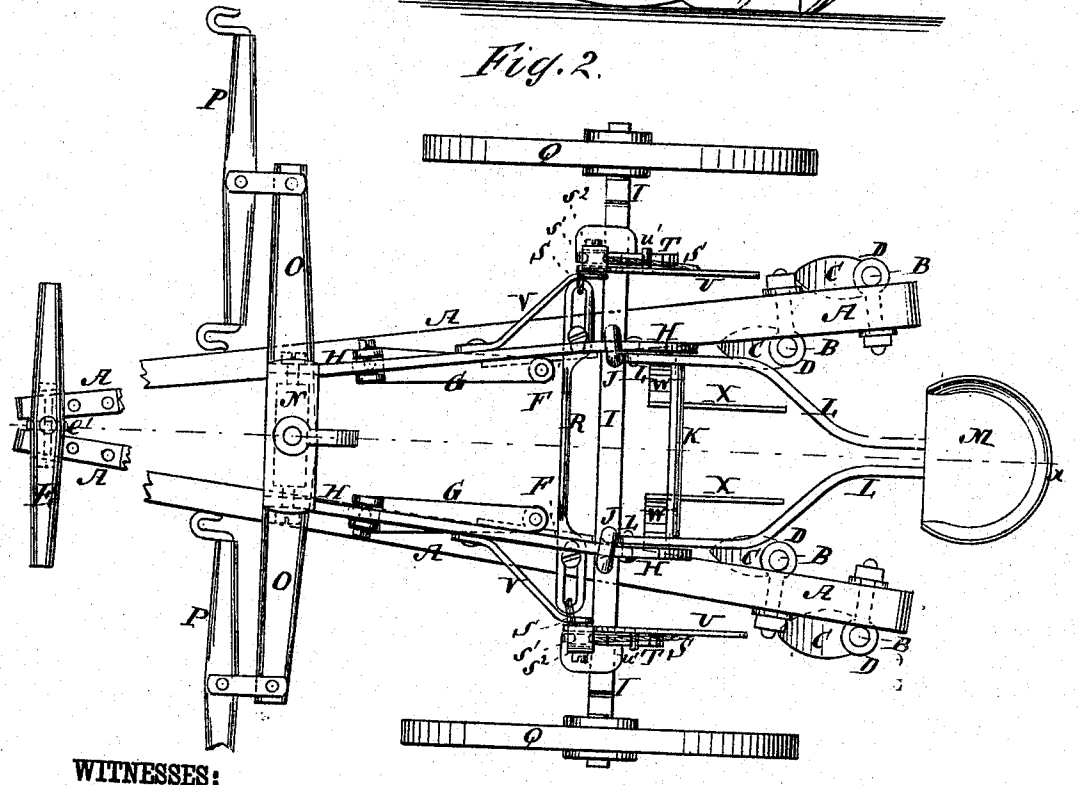


*Fig. 2.*



WITNESSES:

E. Wolff.

J. N. Scarborough.

INVENTORS

J. S. Johnston.

C. A. Johnson

BY Munn & Co.

ATTORNEYS.

# UNITED STATES PATENT OFFICE.

JOHN S. JOHNSTON AND CHARLES A. JOHNSON, OF ROCKFORD, ILLINOIS.

## IMPROVEMENT IN CULTIVATORS.

Specification forming part of Letters Patent No. **198,624**, dated December 25, 1877; application filed October 22, 1877.

*To all whom it may concern:*

Be it known that we, JOHN S. JOHNSTON and CHARLES A. JOHNSON, of Rockford, in the county of Winnebago and State of Illinois, have invented a new and useful Improvement in Cultivators, of which the following is a specification:

Figure 1 is a vertical longitudinal section of our improved cultivator, taken through the line *x x*, Fig. 2. Fig. 2 is a top view of the same.

Similar letters of reference indicate corresponding parts.

The object of this invention is to furnish an improved cultivator which shall be so constructed that the plows may be raised from the ground by the backward movement of the driver, which may be easily guided and controlled, and which shall be simple in construction.

The invention will first be described in connection with the drawing, and then pointed out in claim.

A are the plow-beams, to the rear parts of which are secured the standards B of the plows C, by means of hook-bolts D. The plow-beams A incline toward each other, extend forward to serve as a tongue, and their forward ends meet and are pivoted to each other by a bolt, *a'*.

E is the neck-yoke, to the center of which is attached an eyebolt, *e'*. The eye of the eyebolt *e'* is placed between the forward ends of the beams A, and the bolt *a'*, that connects said ends, passes through it. By this construction the neck-yoke will be connected with the forward ends of the beams A securely, and at the same time in such a way as will give the said neck-yoke full control over them, while allowing the rear end of each beam to be moved vertically and laterally independent of the other. To the inner sides of the beams A are secured eye or socket plates F by bolts which pass through slots in said plates, to cause the machine to be balanced by the weight of a lighter or heavier driver.

To the eyes or sockets of the plates F are pivoted or hinged the rear ends of the bars G, the forward ends of which are pivoted or hinged to the forward parts of the longitudinal bars H. The rear parts of the bars H are secured to the axle I by hook-bolts J, and have cross-heads formed upon them.

The cross-heads of the bars H have a number of holes formed through them to receive the rod K, which also passes through holes in the bars L, near their forward ends. The forward ends of the bars L are pivoted to the bars H, a little in front of their cross-heads. The bars L are bent inward and then rearward, and to their rear ends is attached the driver's seat M. By this construction the seat M can be adjusted higher or lower by changing the rod K from one hole to another in the cross-heads of the bars H. The forward ends of the bars H are attached to the opposite ends of a cross bar or block, N, to the center of which is pivoted the double-tree O.

To the ends of the double-tree O are pivoted the whiffletrees P, in the usual way. The axle I is bent twice at right angles near its ends, to enable its middle parts to pass over tall plants without injuring them, and upon its journals revolve the wheels 2.

The beams A, a little in front of the axle I, are connected by an arched bar, R, the ends of which rest upon the said beams A, and are slotted longitudinally, to receive the bolts by which they are secured to said beams. This construction allows the beams A to be adjusted wider apart or closer together, as may be required.

To the ends of the arched bar R, or to other supports attached to the beams A, are attached the lower ends of the cords or chains S, which pass over guide-pulleys *s*, pivoted to the arms $s^2$ attached to the segmental ratchet-wheels T or to the axle I. The other ends of the chains or cords S are attached to the levers U, the lower ends of which are pivoted to the lower part of the ratchets T or to the axle I.

To the levers U are attached pins or pawls *w'*, to engage with the teeth of the ratchets T and hold said levers securely in the positions into which they have been adjusted.

The segmental ratchet-wheels T are attached to the axle I, and to them, or to the said axle I, are bolted the rear ends of the braces V, the forward ends of which are secured to the bars H, to strengthen them against side strain.

To the inner sides of the beams A, at a lit-

tle distance in front of the inner plows B C, are attached the upper ends of the bars W, to the lower ends of which are attached the forward ends of the plates X, which project to the rearward at the inner sides of the forward plows B C, to prevent small plants from being injured by the soil thrown by the said plows.

The levers U and the cords or chains S are designed for use for regulating the depth to which the plows enter the ground, and to support the beams and plows when passing to and from the field. The plows are raised from the ground to pass obstructions, and when turning around, by the driver leaning back in his seat, and are again lowered to the ground when the driver moves forward to his ordinary position.

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

The combination of the adjustable eye or socket plates F, the connecting-bars G, the bars H, and the bar or block N, with the plow-beams A and the axle I, whereby the plow-beams are allowed to oscillate laterally and are raised by the driver's weight, substantially as herein shown and described.

JOHN S. JOHNSTON.
CHARLES A. JOHNSON.

Witnesses:
LEWIS W. HYLAND,
THOMAS SULLY.