

(No Model.)

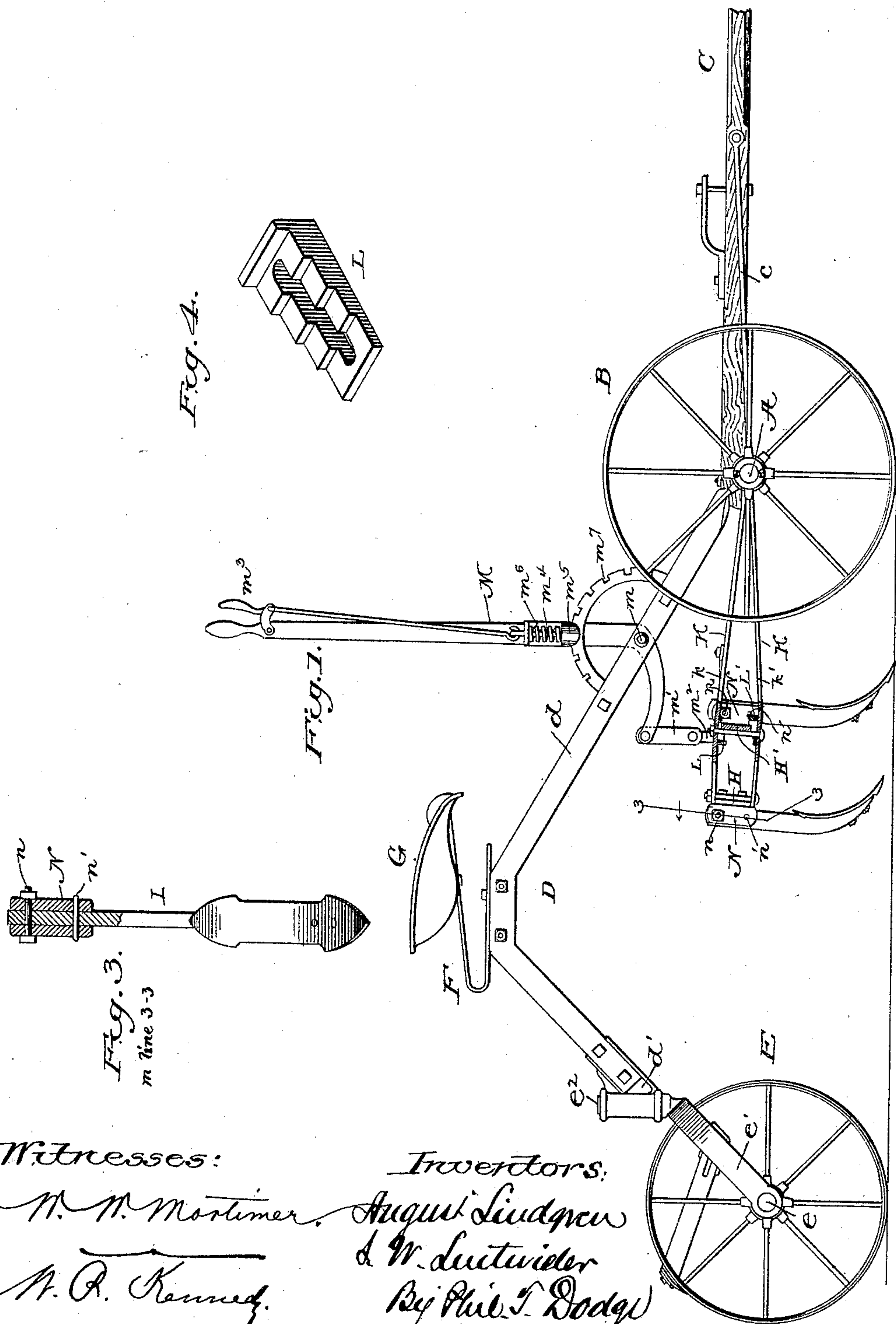
2 Sheets—Sheet 1.

A. LINDGREN & S. W. LUITWIELER.

# WHEEL CULTIVATOR.

No. 460,021.

Patented Sept. 22, 1891.



Witnesses:

M. M. Mortimer

M. Q. Kennedy.

*Inventors,*

August Lindgren

A. W. Luctwiler

By Phil. T. Dodge

Atty

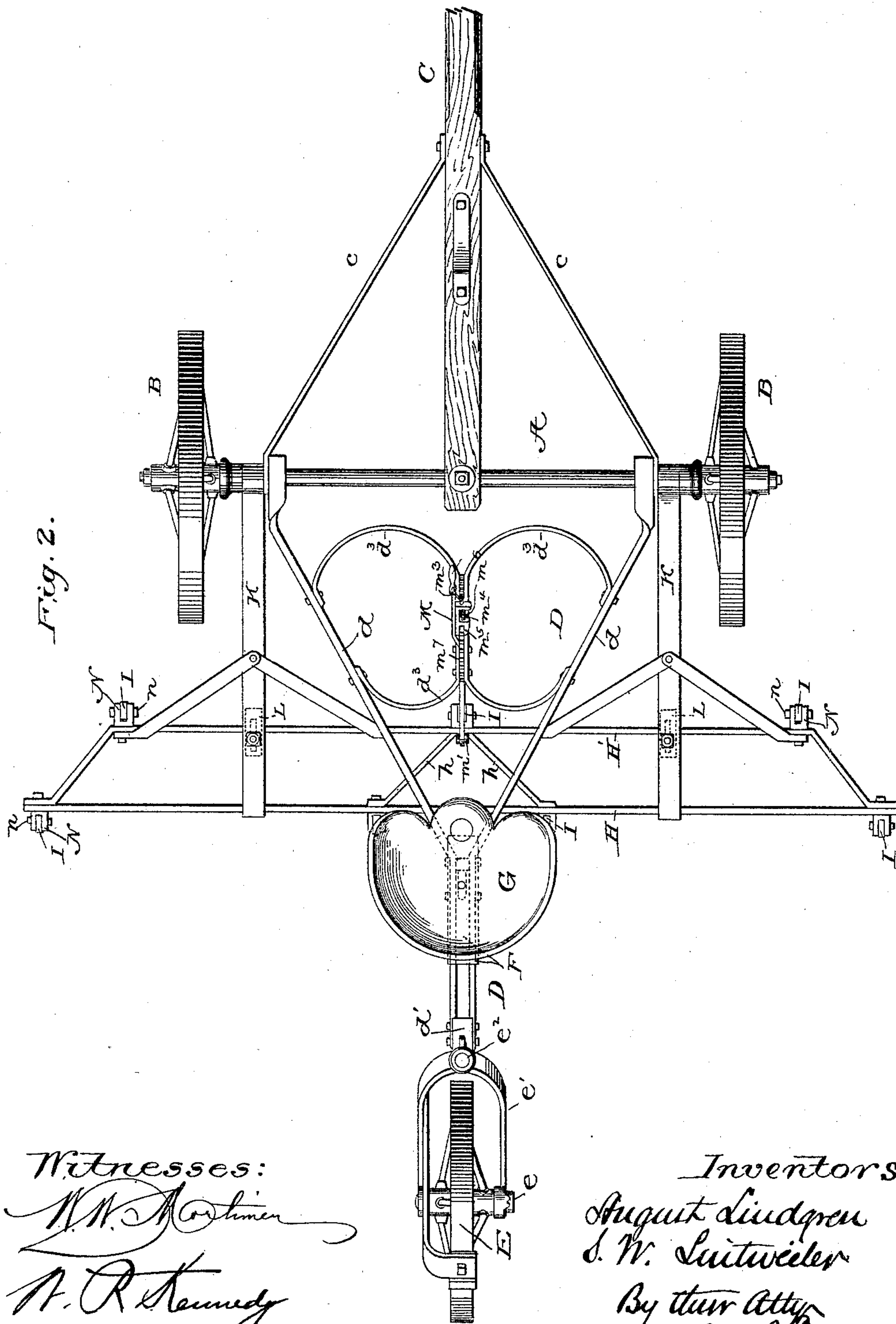
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A. LINDGREN & S. W. LUITWIELER.  
WHEEL CULTIVATOR.

No. 460,021.

Patented Sept. 22, 1891.



Witnesses:

W. W. Washburn  
A. R. Kennedy

*Inventors;*

August Lindgren  
J. W. Luitweiler  
By their Atty  
Phil T. Dodge



# UNITED STATES PATENT OFFICE.

AUGUST LINDGREN, OF MOLINE, ILLINOIS, AND SAMUEL W. LUITWIELER,  
OF LOS ANGELES, CALIFORNIA, ASSIGNORS TO THE MOLINE PLOW  
COMPANY, OF MOLINE, ILLINOIS.

## WHEEL-CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 460,021, dated September 22, 1891.

Application filed March 12, 1891. Serial No. 384,758. (No model.)

*To all whom it may concern:*

Be it known that we, AUGUST LINDGREN, of Moline, in the county of Rock Island and State of Illinois, and SAMUEL W. LUITWIELER, of Los Angeles, in the county of Los Angeles and State of California, have invented certain Improvements in Wheeled Cultivators, of which the following is a specification.

The object of our invention is to provide a wheeled cultivator carrying a series of shovels or teeth, which shall be more particularly adapted for use in orchards and in other places where it is necessary to make abrupt turns and to guide the machine accurately in order to avoid trees and other obstructions.

In the accompanying drawings, Figure 1 represents a side elevation of our improved machine. Fig. 2 is a top plan view of the same. Fig. 3 is a vertical cross-section on the line 3 3. Fig. 4 is a detailed view of one of the devices for adjusting the shovels.

Referring to the drawings, A represents a rigid horizontal front axle, sustained at its ends by ground-wheels B and provided at the middle with a draft-pole or tongue C, which is maintained at right angles to the axle by lateral braces or hounds c.

D represents the main frame of V form when viewed from above. This frame is composed mainly of two metallic bars d, coupled at their forward ends to the respective ends of the axle A, and converging thence toward the rear, where they are bolted to an intermediate vertical socket d'. The rear end of the main frame is sustained by a ground-wheel E, having its horizontal journal e mounted in a swiveling fork or bracket e', provided with a vertical journal e<sup>2</sup>, seated in the socket d', before mentioned. The rear wheel being free to swivel horizontally admits of the entire machine being turned freely and abruptly in either direction under the guidance and control of the draft-pole or tongue. Thus it is that the operator is enabled by properly guiding the beam to perfectly control the movement of the machine.

The main frame bars are bent upward or arched between their front and rear ends, as shown in side elevation in Fig. 1, whereby they are enabled to give direct support to the

spring F, on which the driver's seat G is mounted. This avoids the necessity for a special seat standard or support, and also permits a free rising-and-falling motion of the shovel-beams hereinafter described.

H and H' represent two parallel metal bars lying horizontally beneath the rear part of the main frame and rigidly connected by intermediate bars or braces h, so that they constitute in effect a beam or frame to sustain the shovel-carrying standards I, which are attached alternately to the front and the rear bar, so that they stand in a zigzag or staggered line.

K K represent metallic drag bars or beams jointed to or encircling the axle near its opposite ends and extending thence rearward to the bars H and H', to which they are connected. Each of the beams consists, as shown in Fig. 2, of two bars k k', which are separated vertically at the rear end, in order that they may pass, respectively, above and below the bars or beams H H'.

In order to adjust and control the relative depths to which the shovels and the front and rear standards enter the ground, I provide between the upper and lower bars k k' space sufficient to permit a limited vertical movement of the front upper edge of the bar H', and I introduce between the bar H' and the bar k a stepped bearing-plate L and between the lower edge of the bar H and the bar k' a similar plate L'. These two plates, which are diminished in thickness step by step in opposite directions, serve to hold the bar H in a fixed position between the bars k and k'; but by advancing one of the plates endwise and at the same time withdrawing the other the bar H may be adjusted upward or downward in relation to its companion H'. The effect of this adjustment will be to raise or lower the standards in the front row in relation to those in the rear row, so that the front and rear shovels may be caused to travel at the same depth. The entire shovel-carrying frame—that is to say, the bars H H', their standards, and the bars K K'—is adapted to swing upward and downward around the axle as a center, so as to regulate the depth to which the shovels enter the soil or to admit of their being



raised entirely clear from the ground. An angular hand-lever M, pivoted to the main frame at  $m$ , is connected at its rear end through a link  $m'$  and plate  $m^2$  to the shovel-carrying frame, so that the driver from his place in the seat is enabled to operate the lever and thus throw the standards and shovels upward or downward out of or into action. The lever is provided with a thumb-latch  $m^3$ , acting through rod  $m^4$  on dog  $m^5$ , urged downward by spring  $m^6$  into engagement with a notched plate  $m^7$ , fixed to the main frame, the shovels being thus fixed at the required elevation.

The hand-lever receives its support from bars  $d^3$ , fixed to the bars  $d$  and forming part of the main frame. The standards may be provided with shovels, scarifiers, or other blades of any approved form attached thereto in any approved manner. The standards may be connected to the carrying-bars H H' in any suitable manner; but I commonly prefer to mount each standard in a slotted plate N bolted to the bar and provided with an iron pivot  $n$  and a wooden break-pin  $n'$ , both passing through the standard.

Having thus described my invention, what I claim is—

1. The combination of the front horizontal axle, the ground-wheels mounted on its ends, the main frame mounted at its forward end upon the axle, the single swiveling wheel sustaining the rear end of the main frame, the shovel-carrying frame extending transversely of the main frame between the ground and swivel wheels, the series of shovels mounted thereon, the drag-bars attached at their rear ends to the shovel-carrying frame and pivoted at their front ends to the axle, and mechanism for raising and lowering the shovel-carrying frame at will.

2. In a cultivator, the combination of the following members: a front axle, a tongue and two ground-wheels mounted in the axle, a rigid frame carried at its front end on the

axle and extended rearward in an arched form and provided with a driver's seat, a swiveling wheel connected directly to and carrying the rear end of the frame, a transverse frame located between the front and rear wheels and provided with a series of shovel-carrying standards, vertically-swinging drag-bars carrying the transverse frame at their rear ends, a hand-lever, and locking devices mounted in the arched frame in reach of the rider and connected with the transverse frame.

3. In combination with a wheeled frame, the drag-bars K, each having an upper and a lower member, the two bars H H', carried thereby, and means for raising and lowering one of the last-named bars in relation to the other.

4. In combination, with the drag-bars, each having an upper and lower member, the intermediate bar H, and the movable blocks or wedges adapted to be inserted between the edges of the bar H and the members of the drag-bars, for the purpose of adjusting the intermediate bar vertically.

5. In a cultivator, the combination, with the drag-bars, of the transverse shovel-carrying bars carried thereby one in advance of the other, one of said bars fixed and the other adjustable vertically with relation thereto.

In testimony whereof I hereunto set my hand, this 23d day of January, 1891, in the presence of two attesting witnesses.

AUGUST LINDGREN.

Witnesses:

S. M. HILL,

M. G. MARONEY.

In testimony whereof I hereunto set my hand, this 29th day of January, 1891, in the presence of two attesting witnesses.

SAMUEL W. LUITWIELER.

Witnesses:

F. E. FRANTZ,

W. L. CLEVELAND.