

(No Model.)

J. DODGE.

CULTIVATOR.

No. 401,778.

Patented Apr. 23, 1889.

Fig. 1.

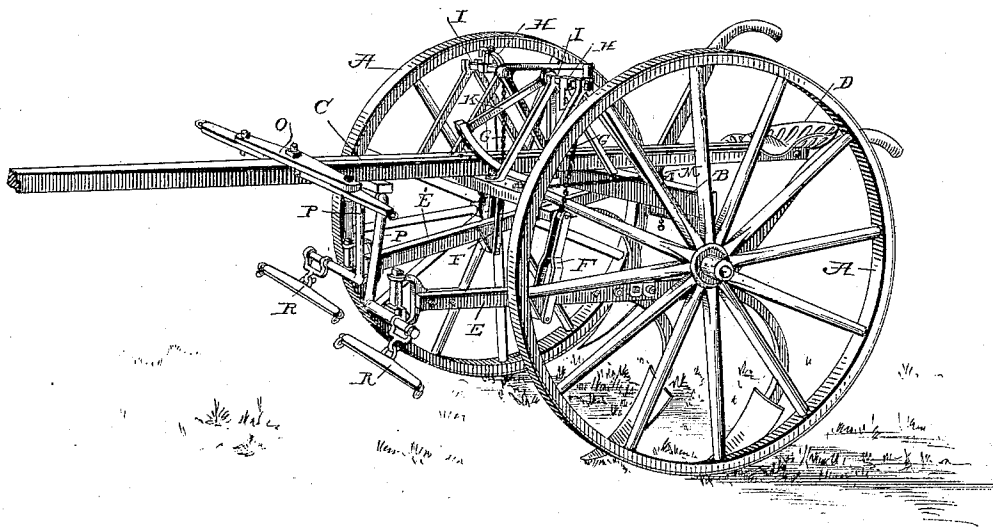


Fig. 3.

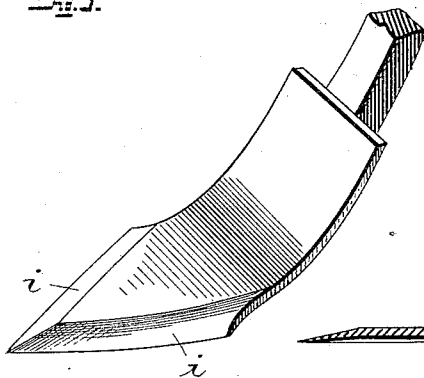


Fig. 4.

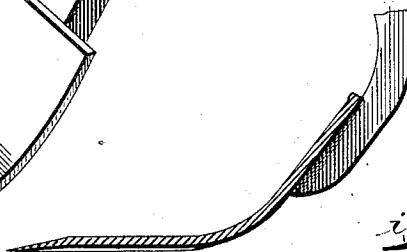


Fig. 5.

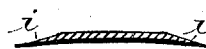
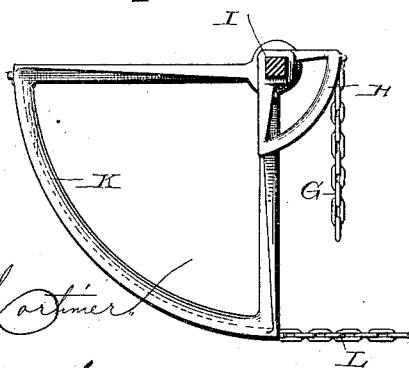


Fig. 2.



Witnesses,

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UNITED STATES PATENT OFFICE.

JOSIAH DODGE, OF APPLETON CITY, MISSOURI.

CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 401,778, dated April 23, 1889.

Application filed August 6, 1888. Serial No. 282,111. (No model.)

To all whom it may concern:

Be it known that I, JOSIAH DODGE, of Appleton City, in the county of St. Clair and State of Missouri, have invented certain Improvements in Cultivators, of which the following is a specification.

My invention relates to that class of cultivators and similar implements in which the drag bars or beams are carried beneath a wheeled draft-frame and controlled as to their vertical position by suspending or adjusting devices carried by said frame.

In the accompanying drawings, Figure 1 is a perspective view of a cultivator constructed in accordance with my invention. Fig. 2 is a side view illustrating the construction of the devices for effecting the vertical adjustment of the beams. Figs. 3, 4, and 5 are respectively a perspective view, a longitudinal vertical section, and a vertical cross-section of one of the shovels.

Referring to the drawings, A A represent two ground-wheels connected directly or through the medium of rigid brackets to the ends of a transverse axle, B, which in turn gives support to the draft-frame C, bolted rigidly thereon. This draft-frame, which may be of any suitable form, consists, preferably, of two bars converging toward their forward ends, in order to form a draft-pole or tongue in a manner commonly practiced at the present day in the construction of wheeled cultivators and familiar to every person skilled in the art. I commonly provide the draft-frame with a rearward extension giving support to the driver's seat D; but this is not a necessary feature of the machine.

E E' represent two drag bars or beams, which are provided with shovel-carrying standards at their rear ends, and which may be, both as regards their own construction and the construction and arrangement of their shovels, identical in all respects with the beams now in general use. To each of the beams I pivot midway of its length, or thereabout, a suspending link or stirrup, F, the upper end of which is carried by a chain, G, connected at its upper end to a sector-plate, H, secured on a short rock-shaft, I, mounted in rigid bearings on the main frame, so that as the shaft is turned in the proper

direction the chain will be wound upon the periphery of the plate and the beam and shovels supported at the required height, while at the same time the beam is left free to move both laterally and longitudinally, as may be required.

The shaft I carries a second and larger sector-plate, K, to the front edge of which is connected a chain, L, passing around its periphery and within reach of the driver. It is by drawing rearward on this chain that the driver is enabled to turn the plate H and effect the vertical adjustment of the beam. To secure the change in position and thus hold the beam at the proper point, the frame is provided with a crotch-plate, M, or its equivalent, in such position that the driver may conveniently engage the chain therewith.

It will be observed that the suspending devices for the two beams are entirely independent of each other, so that each may be adjusted without reference to the other. The sector-plates are employed for the reason that they enable the operator to control and adjust the beams by a given application of power regardless of their weight. In other words, they avoid that change of leverage and weight which would result from the employment of an ordinary hand-lever, the angle of which is constantly changing during its movement in relation to the direction in which the power is applied.

Instead of connecting the drag-bars to the main frame and drawing them therefrom, as usual, I provide distinct and independent means for drawing the frame and the drag-bars, and it is this feature which constitutes the essence of my present invention.

To the draft-frame I pivot midway of its length a doubletree, O, which will be provided with singletrees or equivalent devices for connection with the harness of the draft-animals, this connection serving to advance the main frame in the same manner as in other machines.

Each beam is mounted at its forward end on a horizontal wrist or journal on the lower end of a pendent link, P, which has its upper end connected to the frame by a horizontal wrist. This connection controls the height of the beam at its forward end, but permits the

same to move forward and backward independently of the frame with entire freedom. The connection between the forward end of the beam and the journal of the link P should be such as to admit of the beam being adjusted vertically in relation thereto, in order to change the angle of the shovels, and thus control their entrance into the ground, as in other implements. The joint or coupling should also include, as shown, a vertical axis, allowing the rear end of the beam to swing laterally, while the front end is held in its proper position. To the coupling at the forward end of each beam, and practically directly in line with the beam, I connect a singletree, R.

In making use of my machine I employ two draft-animals provided with harness—such as represented in my Letters Patent of the United States No. 302,473—the harness of each animal having two pairs of traces, the upper pair for attachment to the singletree of the main frame and the lower pair for attachment to the singletree of one beam, as illustrated in the drawings. It will be perceived that under this arrangement the frame is drawn by the upper traces and the beams drawn by the lower traces, each being propelled wholly independent of the other.

In practice it is found that by applying the propelling-power directly to the beams, instead of propelling them through intermediate connections with the frame, the machine will travel more steadily and easily than those of ordinary construction. It is found that the passage of the wheels over the uneven or irregular surface of the ground, and the consequent irregularity in the movement of the frame, has less tendency to cause irregular movement of the shovels than in other machines.

A second part of my invention consists in the peculiar formation of the shovels. As commonly made cultivator-shovels are curved sharply upward from toe to heel and beveled upward at the edges from the back to a cutting-edge at the upper face.

My improved shovel is made flat or slightly concave in cross-section at its forward end from one edge to the other, as shown in Fig. 5, and beveled downward from the top to the lower face, as shown at *i*, so that the cutting-edges are at the bottom. The under face of the shovel, instead of rising rapidly toward the rear end, as usual, is carried backward in

a straight flat form and in a substantially-horizontal plane from the toe to the heel—that is to say, to the rear ends of the cutting-edges. In practice I find that a shovel thus formed may be operated with much less power than those made in the usual form, that it destroys the weeds more effectively, and that it distributes the soil more advantageously.

Having thus described my invention, what I claim is—

1. In a cultivator, a main frame provided with ground-wheels and with a doubletree to permit the connection of two draft-animals thereto, two drag bars or beams connected to the frame by suspending devices and free to move longitudinally in relation to each other and to the frame, and two singletrees connected one with each beam, substantially as described.

2. In a cultivator, the main or draft frame provided with supporting-wheels and with means for the connection of two draft-animals thereto, the pendent arms or links attached to said frame, the two independent drag bars or beams connected to the respective links by joints which admit of their rear ends swinging vertically and laterally, the singletrees connected to the forward ends of the respective beams, and adjustable devices, substantially as shown, connecting the beams with the frame and regulating the elevation of their rear ends.

3. In a cultivator, a wheeled frame provided with a draft device, a drag-bar connected to said frame by devices which permit free longitudinal motion in relation thereto, and a distinct and independent draft device connected with said beam, as described, whereby the power required for the propulsion of the beam may be applied to each independently of the other.

4. In combination with the wheeled frame, the drag-bar, the rock-shaft provided with the sector-plates, the suspending device connecting one of said plates with the beam, the chain extended rearward from the other of said plates, and a fastening device for the last-named chain, substantially as described.

In testimony whereof I hereunto set my hand, this 24th day of June, 1887, in the presence of two attesting witnesses.

JOSIAH DODGE.

Witnesses:

M. M. SQUIRE,

A. C. KINCHEHEL.