

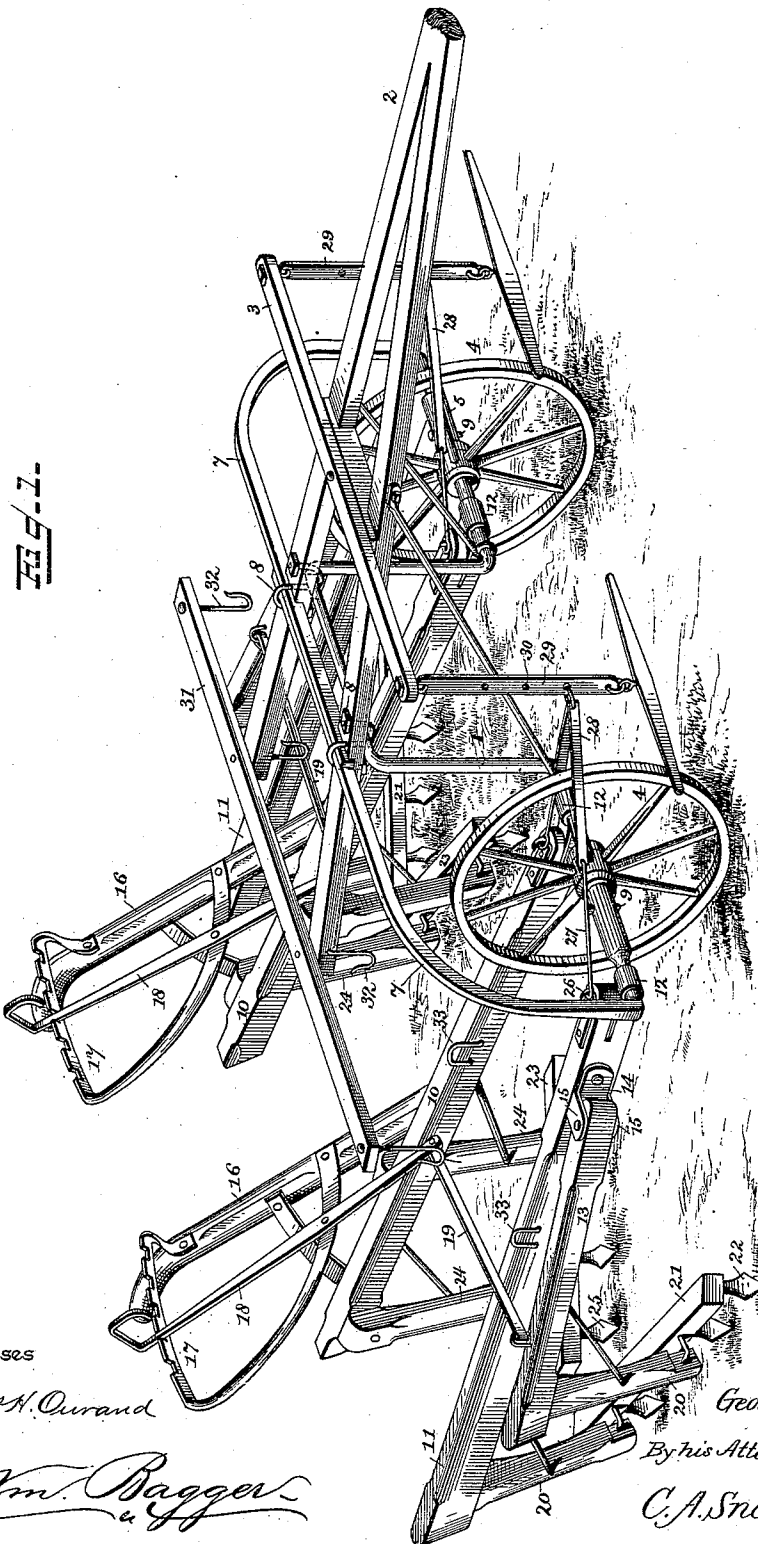
(No Model.)

2 Sheets—Sheet 1.

G. W. CRAWFORD.
CULTIVATOR.

No. 470,234.

Patented Mar. 8, 1892.



Witnesses

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CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 470,234, dated March 8, 1892.

Application filed April 22, 1891. Serial No. 390,008. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. CRAWFORD, a citizen of the United States, residing at Protection, in the county of Comanche and State of Kansas, have invented a new and useful Cultivator, of which the following is a specification.

This invention relates to cultivators of that class which are provided with an arched axle adapted to straddle the row of plants that is being operated upon; and it has for its object to provide a machine of this class with an extension-axle by means of which the cultivator-beams may be adjusted at various distances apart.

A further object of the invention is to provide means for adjusting the several beams with relation to each other.

A further object of the invention is to so construct the machine that it may be readily converted from a double into a single cultivator.

A further object of the invention is to so construct and arrange the cultivator-blades as to pulverize the soil and to avoid throwing clods and stones in the direction of the growing plants.

With these several objects in view the invention consists in the improved construction, combination, and arrangement of parts, which will be hereinafter fully described, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view of a cultivator constructed in accordance with my invention. Fig. 2 is a transverse sectional view taken vertically through the axle of the machine and looking in a rearward direction. Fig. 3 is a plan view showing the machine converted into a single cultivator.

Like numerals of reference indicate like parts in all the figures.

1 designates an ordinary arched axle, the arch of which supports the tongue 2, which is of ordinary construction, and upon which is pivotally mounted the evener 3. The spindles of the axle 1 carry the wheels 4. Said spindles are made somewhat longer than is usually the case and are adapted to receive the sockets 5, formed at the inner ends of arms 6, which extend inwardly from the axle-sections 7 7. The latter, which consist of suit-

ably-curved bars, are mounted upon the upper side of the tongue, to which latter the said axle-sections are secured by means of hooked bolts or clips 8. It will be observed that by loosening the said hooks the said axle-sections may readily be moved outward or inward, as may be desired. The sleeves 5 may be connected with the spindles of the arched axle by means of pins 9, which also assist in securing the said axle-sections in position.

10 10 and 11 11 designate, respectively, the inner and the outer cultivator-beams. The inner beams 10 are mounted by means of the couplings 12 upon the spindles of the arched axles inside the wheels 4. The outer beams 11 are similarly mounted upon the inwardly-extending arms 6 of the axle-sections 7, outside the wheels 4. To the outer sides of the outer cultivator-beams are connected the auxiliary beams 13 by means of the universal couplings consisting of plates 14, pivoted to the outer sides of the beams 11 and provided at their upper and lower edges with lugs or ears 15, between which the auxiliary beam 13 is pivoted upon a bolt. The said auxiliary beams are thus capable of swinging in a vertical as well as in a horizontal plane with relation to the beams 11, while the latter, as well as the beams 10, have the same freedom of movement with relation to the axle of the machine. The inner cultivator-beams are provided with handles 16, by means of which they may be readily guided by the operator.

Suitably bolted or otherwise secured to the handles 16 are the rack-bars 17, to which are pivoted levers 18, the upper ends of which are adapted to engage the said rack-bars and to be held thereby in any position to which they may be adjusted. The lower ends of the levers 18 are connected by pivoted rods 19 with the auxiliary beams 13, which may thus be adjusted with relation to the beams 10. The beams 11 and the auxiliary beams 13 are each provided with a downwardly-extending standard 20, which said standards are connected by means of a bar 21, having downwardly-extending teeth or blades 22. A bar 23, similar to the bar 21, connects the standards 24 24, which extend downwardly from opposite sides of the inner cultivator-beams 10, and said bar 23 is likewise provided with downwardly-ex-

tending teeth or blades 25. The bars 21 23 converge in a rearward direction, so that the dirt which is stirred and agitated by the action of the teeth upon their under sides will be thrown up into a ridge at a distance from the growing plants, thus protecting the latter from stones, clods, and the like. The bars 21 are secured to the standards 20 of the beams 11 and the auxiliary beams 13 by means of swiveled hooks or bolts, which will enable the said bars 21 to adjust themselves to any adjustment of the auxiliary beams with relation to the beams 11, as will be readily understood. The said bars 21 may thus be adjusted at different angles to the toothed bars 23, and they may also be adjusted to an inclined position with relation to the surface of the ground, thus enabling the machine to be adapted either to level land or to travel in furrows or between ridges of the soil. The beams 11, being connected with the auxiliary beams by the toothed bars 21, may be adjusted with relation to the inner beams 10 by the mechanism above described for adjusting the auxiliary beams. The front ends of the beams 10 and 11 are provided with hooks 26, which are connected by means of rods or links 27 with the V-shaped couplings 28, which are in turn connected adjustably with the draft-bars 29, depending from the ends of the evener 3. Said draft-bars are provided with series of perforations 30 for the proper adjustment of the V-shaped couplings 28. A cross-bar 31 at the rear end of the tongue is provided with depending hooks 32, adapted to engage links or eyes 33 upon the cultivator-beams, thus enabling the latter to be suspended out of operation when desired.

The machine thus far described which constitutes what is known as a "double cultivator," may be converted into a single cultivator by loosening the clips 8, by means of which the extension-axle sections 7 are secured to the tongue, and, removing the pins or bolts 9, the axle-sections 7, with their inwardly-extending arms and sockets, may then be removed, together with the auxiliary beams 13 and the outer beams 11. The rack-bars 17, with the levers and connecting-rods, will also be removed from the handles 16 of the beams 10 and the couplings 28, and links 27 are likewise removed, a single connecting-link of suitable length being substituted to connect the hook at the front end of each of the beams 10 with the draft-bar depending from each end of the evener. The machine is then ready for operation as a single cultivator.

From the foregoing description, taken in connection with the drawings hereto annexed, the operation and advantages of my invention will be readily understood.

The construction of the machine is simple and inexpensive. The large number of teeth or blades with which it is provided will cause the soil to be thoroughly stirred and pulverized and all stones and clods will be thrown away from the growing plants, thus avoiding danger of injuring the latter. It will of

course be understood that in lieu of the "teeth" herein described, and shown in the accompanying drawings, cultivator blades or shovels of any desired kind or pattern may be mounted upon the bars 21 and 23, according to the work which is to be performed.

Having thus described my invention, what I claim is—

1. In a cultivator, the combination, with an arched axle, of an arched extension-axle located thereover, the sections of which have sockets at their outer ends adapted to receive the spindles of the arched axle, substantially as set forth.

2. In a cultivator, the combination of an arched axle, an arched extension-axle located thereover and composed of two parts or sections having inwardly-extending arms provided with sockets to engage the spindles of the arched axle, and means for securing the sections of the extension-axle in position, substantially as set forth.

3. In a cultivator, the combination of an arched axle, the extension-axle composed of suitably-curved sections having inwardly-extending arms provided with sockets to receive the spindles of the arched axle, connecting-pins for said spindles, and sockets and hooked bolts or clips securing the extension-sections adjustably to the tongue or frame of the machine, substantially as set forth.

4. In a cultivator, the combination of the arched axle, the extension-axle sections located thereover and terminating in inwardly-disposed sockets connected adjustably therewith, and the inner and outer cultivator-beams connected, respectively, with the spindles of the arched axle and with inwardly-extending sockets of the extension-sections, substantially as set forth.

5. In a cultivator, the combination of the arched axle, the extension-axle sections, the inner and outer cultivator-beams connected, respectively, with the spindles of the arched axle and with the extension-sections, the auxiliary beams connected by means of universal joints with the outer sides of the outer beams, and means for adjusting the said auxiliary beams with relation to the inner cultivator-beams, substantially as set forth.

6. The combination of the inner and outer cultivator-beams, the auxiliary beams connected with the outer, the toothed bars secured to the lower ends of standards depending from the outer and from the auxiliary beams by means of swiveled hooks or bolts, and similar toothed bars secured at the lower ends of standards depending from the inner cultivator-beams, substantially as set forth.

7. The combination of the inner and outer cultivator-beams, the auxiliary beams connected with the latter, the toothed bars secured to the lower ends of standards depending from the outer and from the auxiliary beams, the rack-bars secured to the handles of the inner beams, the levers pivoted to and adapted to engage said rack-bar, and links or

rods connecting the lower ends of said levers with the auxiliary beams, substantially as and for the purpose set forth.

5 8. In a cultivator, the combination of the arched axle, the extension-axle sections having sockets to engage the spindles of the arched axle, the inner and outer cultivator-beams having hooks at their front ends, an
10 evenner pivoted upon the tongue or frame of the machine, the draft-bars depending from the ends of said evenner, the V-shaped couplings connected with said draft-bars, and the

links connecting said couplings with the hooks at the front ends of the several cultivator-beams, substantially as and for the purpose set forth. 15

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

GEORGE W. CRAWFORD.

Witnesses:

H. M. WINN,

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