

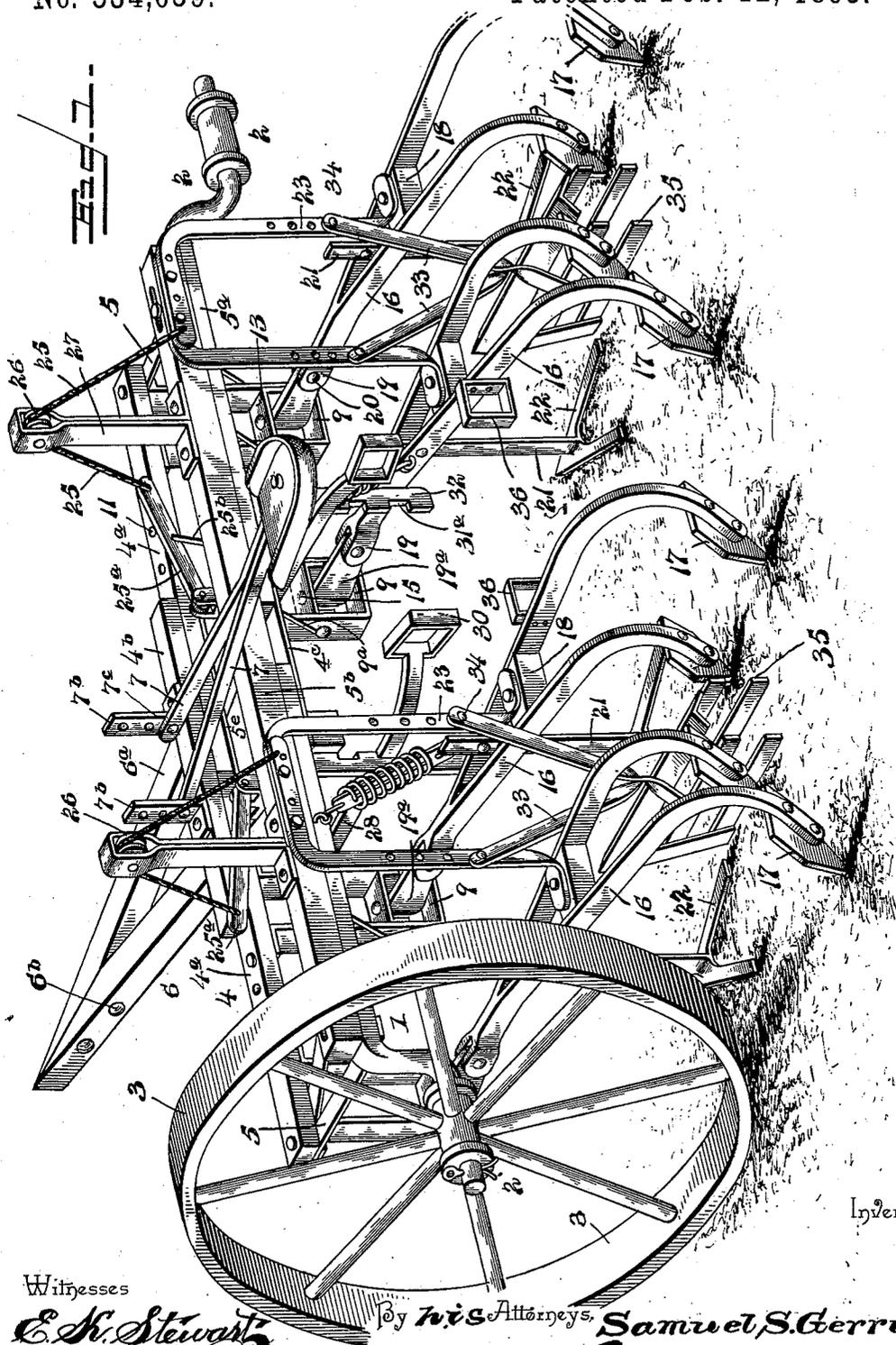
(No Model.)

3 Sheets—Sheet 1.

S. S. GERRISH. CORN CULTIVATOR.

No. 534,039.

Patented Feb. 12, 1895.



Inventor

Witnesses

E. H. Stewart
J. P. Riley

By his Attorneys,

Samuel S. Gerrish
C. Snow & Co.

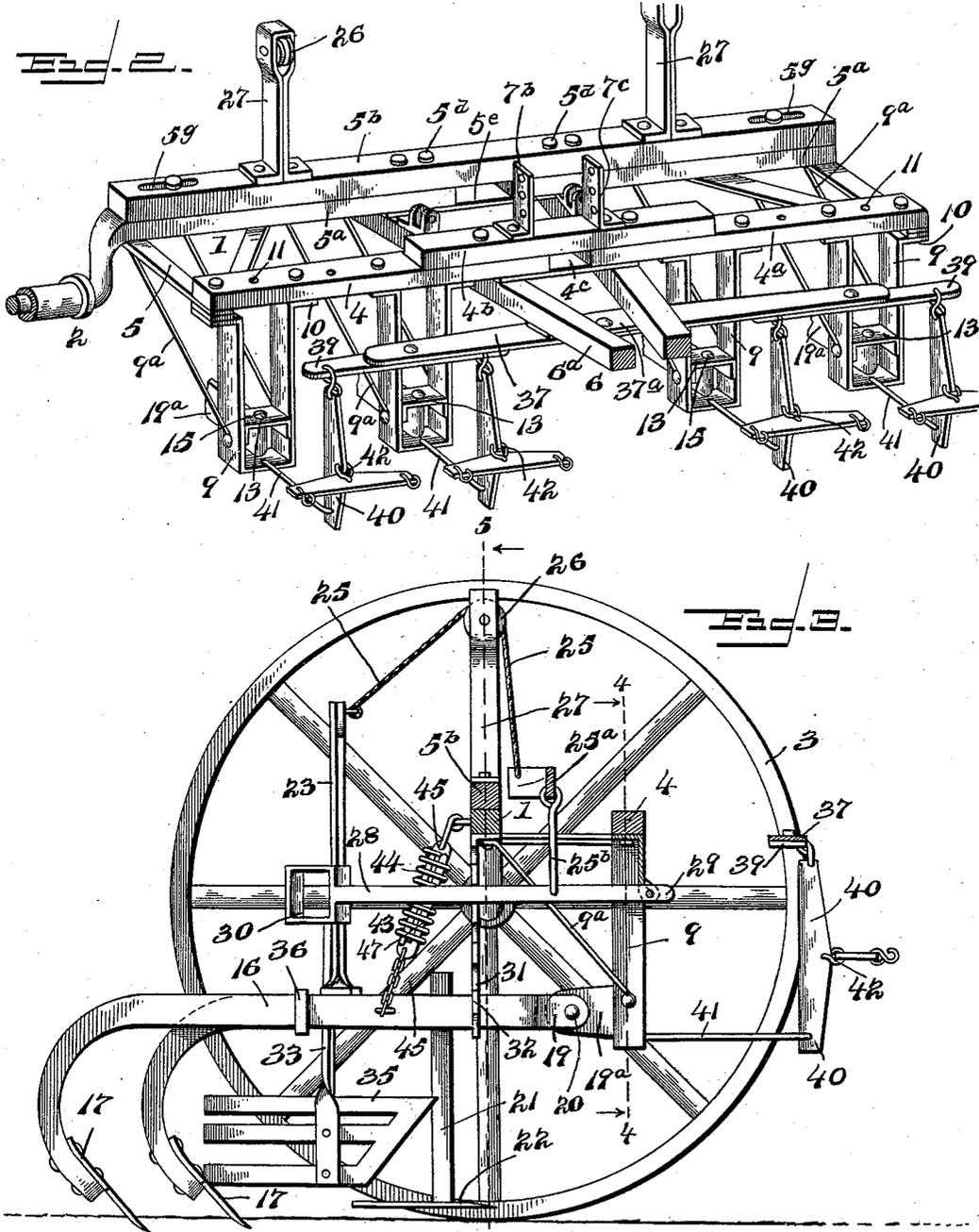
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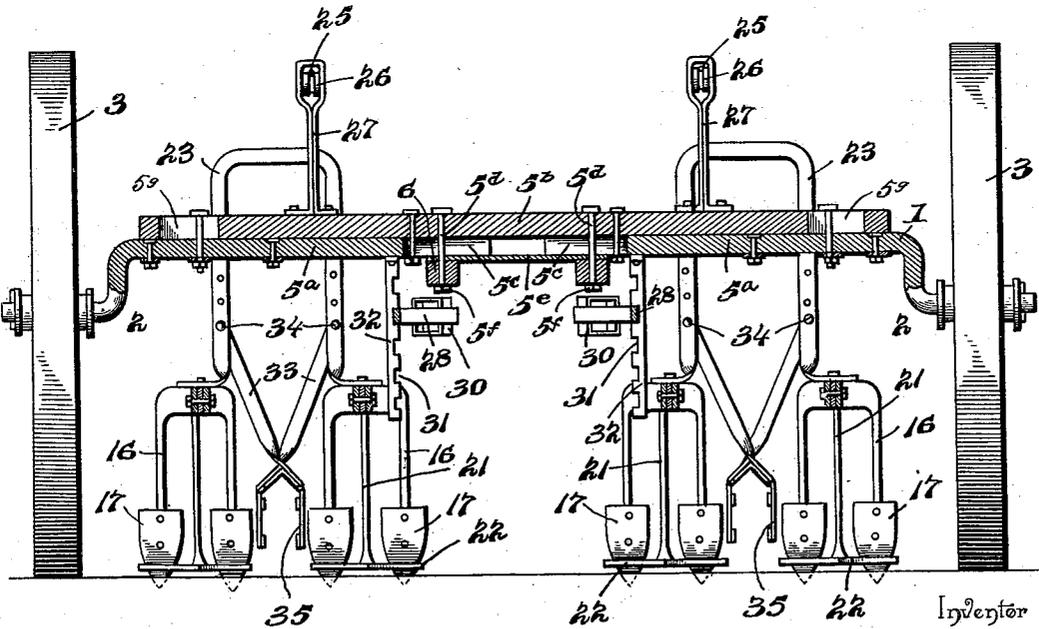
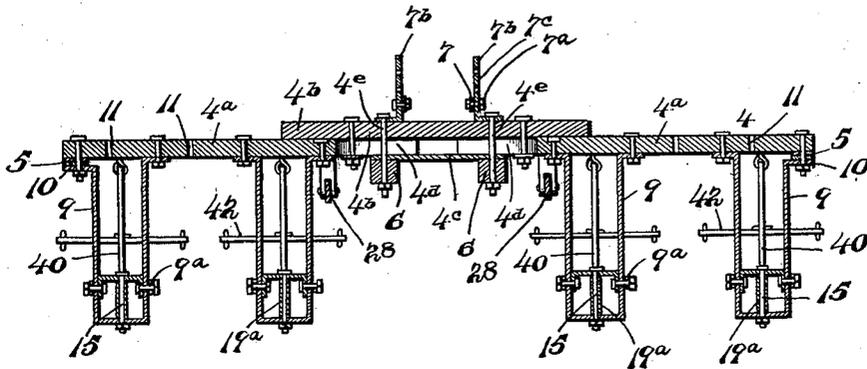
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UNITED STATES PATENT OFFICE.

SAMUEL S. GERRISH, OF WILSONVILLE, NEBRASKA.

CORN-CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 534,039, dated February 12, 1895.

Application filed April 5, 1894. Serial No. 506,520. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL S. GERRISH, a citizen of the United States, residing at Wilsonville, in the county of Furnas and State of Nebraska, have invented a new and useful Cultivator, of which the following is a specification.

The invention relates to improvements in cultivators.

The object of the present invention is to improve the construction shown in Patent No. 485,271, granted me November 1, 1892, to enable the axle to be varied in length to accommodate the wheels to the rows of corn, to cushion the dropping of the cultivator beams, and to facilitate their vertical adjustment.

The invention consists in the construction and novel combination and arrangement of parts, hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

In the drawings—Figure 1 is a rear perspective view of a cultivator constructed in accordance with this invention. Fig. 2 is a front perspective view, the parts being broken away, and the wheels being removed. Fig. 3 is a longitudinal sectional view of the cultivator. Figs. 4 and 5 are vertical transverse sectional views on lines 4—4 and 5—5 of Fig. 3.

Like numerals of reference indicate corresponding parts in all the figures of the drawings.

1 designates an arched axle, the extremities of which are provided with depressed bearings or journals 2, which carry ground wheels 3 transversely opposite each other. A front cross-bar 4 is connected to the axle 1 through the medium of connecting bars 5, and a draft tongue 6; and the axle, the cross-bar and the draft tongue constitute a supporting frame.

The arched axle, which may be constructed of any suitable material, is composed of adjustable sections 5^a, an upper connecting bar 5^b and a lower tie-bar 5^c. The inner ends of the axle sections 5^a are provided with longitudinal slots 5^d, in which are arranged vertical bolts 5^e, which pass through the connecting bar, the tongue, and a lower tie-bar 5^c. By this construction the axle may be varied in length to accommodate the carrying wheels

to the rows by simply loosening the nuts 5^f of the bolts 5^e. The outer ends of the sections 5^a have a bolt and slot connection 5^g.

The cross-bar 4 is constructed similarly to the axle in order to conform to the adjustment thereof, and it is composed of two sections 4^a, an upper connecting bar 4^b, and a lower tie-bar 4^c. The inner ends of the adjustable sections 4^a are provided with longitudinal slots 4^d, in which are arranged vertical bolts 4^e, passing through the top cross or connecting bar 4^b, the lower tie-bar 4^c, and the tongue. The adjustment of the cross-bar 4 is obtained by means of the bolts, the nuts of which may be readily loosened to permit the sections, to be moved inward or outward, whereby the adjustment is effected without detaching or disconnecting any of the parts.

The tongue 6 is composed of two converging sides 6^a, which have their outer ends 6^b bolted together, and their rear ends are arranged beneath the axle and the cross-bar 4 and attached to those parts as before described by the vertical bolts.

A V-shaped standard 7 extends rearward from the supporting frame, and has mounted on it at its rear end a seat 8 for the accommodation of the driver, who is thus in rear of the machine, and, as will hereinafter appear, thereby has full control of the cultivating mechanism carried by the machine.

From the cross-bar 4 depends a series of (in this instance four) U-shaped stirrups 9, the upper ends of which are laterally bent in opposite directions, and perforated forming securing plates 10. At intervals the cross-bar 4 is provided with perforations or bolt holes 11, and into the pairs of these holes and through the perforated securing plates of the stirrups securing bolts are passed. By placing these bolts in various pairs of perforations the stirrups may be adjusted different distances apart, all for a purpose hereinafter to be described.

The stirrups 9 are supported by upwardly and rearwardly inclined brace rods 9^a, arranged in pairs, and extending from the stirrups near the lower ends thereof to the axle.

Cross-bars 13 connect the opposite sides of each stirrup near the lower end thereof, and

these cross-bars and the bottoms of the stirrups, which bottoms are transversely disposed, are perforated at their centers, and receive pintles 15 located at the front ends of and serving to connect pivotally a series of pairs of cultivator beams 16, which beams vary in length—that is to say the two inner beams of an adjacent pair are shorter than the outer ones. Each beam carries a shovel 17, and each pair of beams is spaced apart by transverse braces or space blocks 18. Clevises 19 are located at the front ends of the beams, and the same are pivoted to the pintle plates 19^a as indicated at 20. From each pair of beams depends a vertical standard 21, and the same carries an advance weed cutting and trash clearing shovel 22, which travels ahead of the pair of cultivator shovels as shown.

Inverted U-shaped frames 23 have their terminals secured to the opposite space blocks of the adjacent pairs of shovel standards or beams 16, and said frames are formed in sections, the upper ends of which overlap, and are provided with adjusting bolt holes and connected by bolts 24. Ropes or cables 25 are connected to the frames, and pass over pulleys 26, of standards 27 which rise from the axle, and have their front ends connected to a pair of rearwardly diverging levers 25^a. The rearwardly diverging levers 25^a have their front ends fulcrumed on the supporting frame, and are connected intermediate of their ends by depending links 25^b, with converging levers 28. The levers 28 are fulcrumed at 29 to the under side of the cross bar 4 in advance of the axle, and extend rearward under the same terminating in feet receiving stirrups 30 at each side of the standard 7, that supports the seat for the driver. It will be obvious that the driver by placing his feet in these stirrups 30, and depressing the levers may raise and lower the series of standards and their shovels, and by moving the operating levers 28 laterally into notches 31 formed in the inner edges of depending locking rack-bars 32 secured to the under side of the axle, the said cultivator standards may be maintained elevated the desired height from the ground.

The front ends of the sides of the V-shaped seat standards 7 are adjustably secured by bolts 7^a to upward extending arms 7^b of L-shaped bracket plates 7^c. The L-shaped bracket plates 7^c are mounted on the supporting frame, and their vertical arms are provided with series of perforations to receive the bolts which adjustably connect the front ends of the sides of the seat standard with the supporting frame.

From the opposite sections of the frames 23 depend standards 33, which are adjustably connected at their upper ends to the frames by means of bolts 34, for the reception of which the standards are perforated. These standards are crossed, and their lower portions are secured to slotted fenders 35, which

fit in the lower crotch formed by crossing the standards 33, and which are located between pairs of cultivators, and are intended to serve the usual purpose of shielding young corn during the process of cultivation. Feet receiving stirrups 36 are located upon the inner pairs of cultivator beams, and the driver sitting upon the seat may place his feet in the stirrups 36 and thereby guide the cultivator shovels when the machine is being turned around.

The machine is provided with an evener bar 37, which is pivoted to a transverse bar 37^a connecting the sides of the tongue. This evener bar has loosely connected to its end doubletrees 39, and from the ends of each doubletree depend bars 40, which have their lower ends connected by links 41 with the bottoms of the front stirrups 9. To the depending bars 40 singletrees are connected, as indicated at 42, and to those the draft animals are hitched. As the machine moves along the cultivators having been lowered by the driver, it will be seen that it straddles three rows of corn, the cultivators working the soil at the two outside rows leaving the middle row to be cultivated on the return trip.

The weed cutters in advance of the cultivators being adjustably and detachably connected to the cultivator beams, may or may not be employed, as desired.

The inner pairs of cultivator beams are connected with the supporting frame yieldingly to cushion the droppings of the cultivators to prevent injury to the machine, and each of these connections consists of a compensating device 43 attached to the axle and connected by a chain or the like with the adjacent cultivator beam. The compensating device comprises a spiral spring 44, and a pair of similarly oppositely disposed bars 45 arranged within the spiral spring 44 and projecting from opposite ends thereof and connected thereto. The projecting portions of the bars are perforated to provide convenient means for attachment, and the inner portions 47 are split or bifurcated, and are adapted to slide readily on each other to form a cushion, as will be readily understood.

It will be seen that the supporting frame may be readily varied in width to accommodate the machine to the rows, that such adjustment may be readily effected without detaching or disconnecting any of the parts of the machine, and that the dropping of the cultivators is cushioned to prevent injury.

It will also be seen that the diverging levers and their connections with the converging operating levers facilitate the raising and lowering of the cultivators, and that the seat is adjustable to enable the feet of the operator to be within convenient reach of the foot stirrups of the operating levers and the cultivator beams.

Changes in the form, proportion and the minor details of construction may be resorted

to without departing from the principle or sacrificing any of the advantages of this invention.

What I claim is—

5 1. In a machine of the class described, the combination of a frame comprising an axle, and a cross-bar arranged parallel and connected together, and each consisting of adjustable sections having inner slotted ends, 10 top connecting bars, located on the upper faces of the sections lower tie-bars, arranged on the lower faces of the same and vertical bolts passing through the slots and said bars and securing the sections in their adjustment, 15 and cultivating mechanism carried by the frame, substantially as described.

2. In a machine of the class described, the combination of a supporting frame comprising an axle and cross-bar connected and each 20 consisting of adjustable sections having inner slotted ends, top connecting bars, located on the upper faces of the sections and lower tie-bars, arranged on the lower faces of the sections, a tongue having forwardly converging 25 sides arranged beneath the axle and the cross-bar, bolts arranged in said slots and passing through the sides of the tongue and said bars, and cultivating mechanism carried by the frame, substantially as described.

30 3. In a machine of the class described, the combination of a supporting frame having an axle, hinged cultivator beams carrying foot stirrups, operating levers connected with the cultivator beams for raising and lowering the 35 same and provided at their outer ends with foot stirrups, a seat arranged adjacent to said stirrups and provided with a standard having

sides, resting upon the back of the supporting frame and projecting rearward beyond the same and thereby forming a fulcrum, 40 bracket plates mounted on the frame and having rigid arms projecting vertically from the frame and provided with series of perforations, and fastening devices arranged in perforations of the bracket plates and adjustably 45 connecting the seat standards with the frame, whereby the seat may be raised and lowered to enable the feet of the operator to reach conveniently the stirrups, substantially as described. 50

4. In a machine of the class described, the combination of the supporting frame, the series of cultivator beams hingedly connected with the supporting frame, the inverted U-shaped suspension frames connected with the 55 cultivator beams, pulleys mounted on the supporting frame, cables passing over the pulleys and having their rear ends attached to the suspension frames, the rearwardly converging levers 28 fulcrumed at their front 60 ends on the frame and provided with foot stirrups at their rear ends, the forwardly converging levers 25^a fulcrumed on the frame and connected with the front ends of the cables and located above said levers 28, and 65 links connecting the adjacent levers, substantially as described.

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

SAMUEL S. GERRISH.

Witnesses:

C. H. PIERCE,
G. B. CLEMMER.