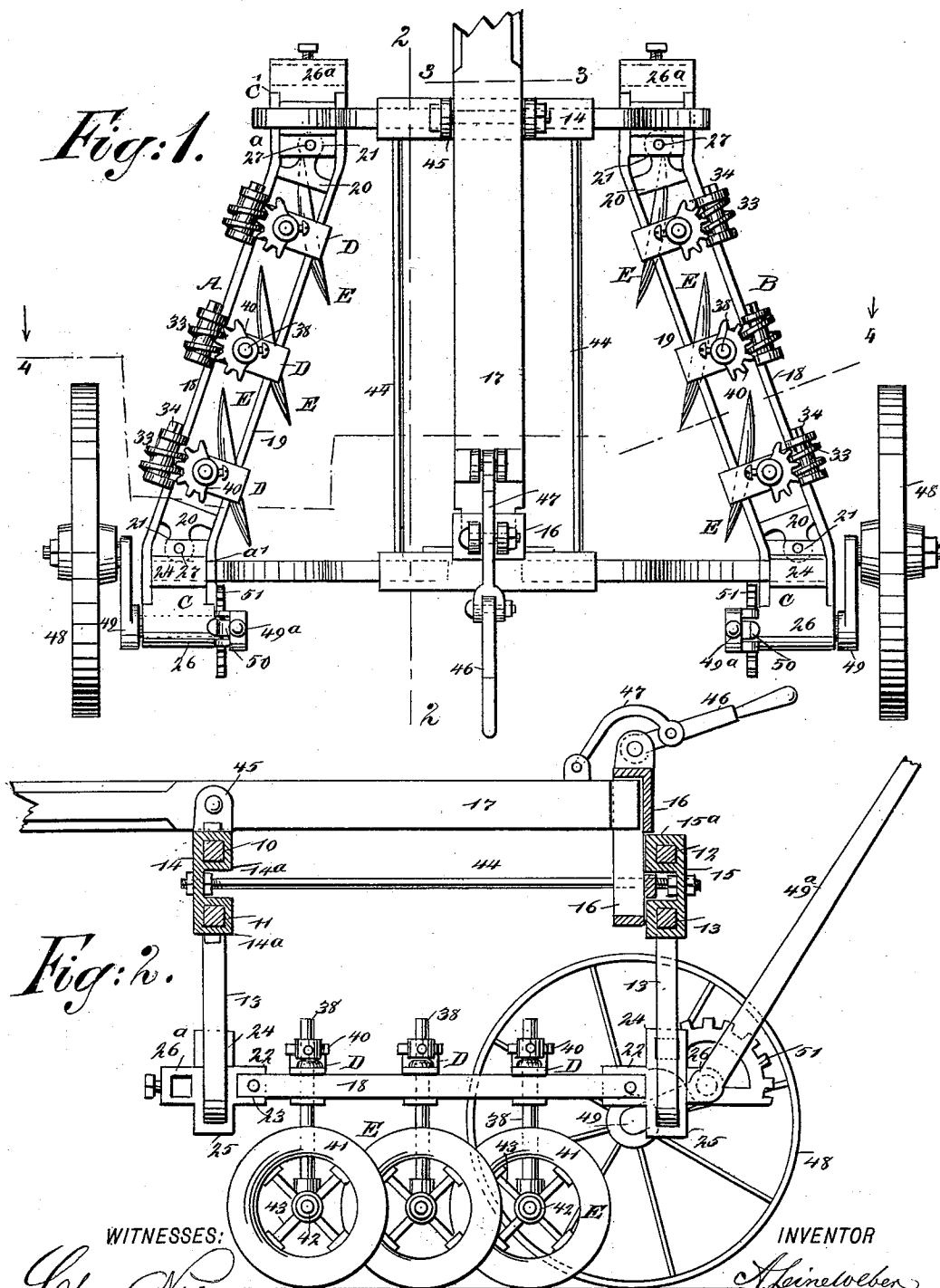


A. LEINEWEBER.
CULTIVATOR.

No. 508,028.

Patented Nov. 7, 1893.



WITNESSES:

Chas. Nida.
C. Sedgwick

INVENTOR

A. Leineweb
BY *Munn & Co.*
ATTORNEYS.

(No Model.)

2 Sheets—Sheet 2.

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Fig: 3.

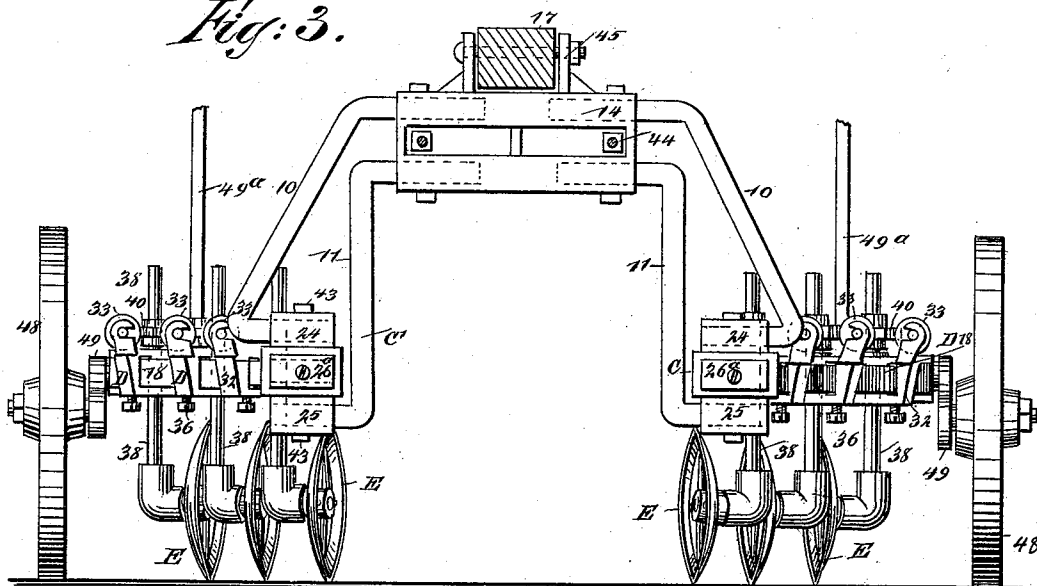
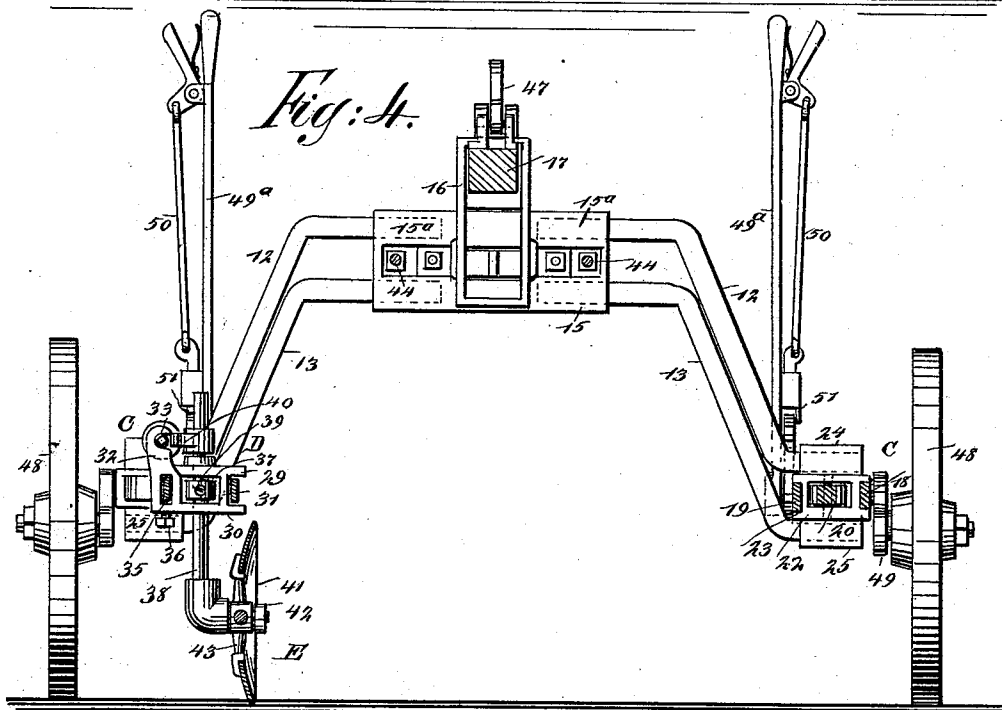


Fig: 4.



WITNESSES:

Chas. Nida.
C. Sedgwick

INVENTOR

A. Leinweber
BY *Munn & Co*
ATTORNEYS.

UNITED STATES PATENT OFFICE.

AUGUST LEINEWEBER, OF DE WITT, NEBRASKA.

CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 508,028, dated November 7, 1893.

Application filed March 2, 1893. Serial No. 464,379. (No model.)

To all whom it may concern:

Be it known that I, AUGUST LEINEWEBER, of De Witt, in the county of Saline and State of Nebraska, have invented a new and useful

Improvement in Cultivators, of which the following is a full, clear, and exact description.

My invention relates to an improvement in cultivators, and especially to an improvement in cultivators of the disk type.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth and pointed out in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts in all the views.

Figure 1 is a plan view of the cultivator.

Fig. 2 is a longitudinal vertical section taken practically on the line 2—2 of Fig. 1. Fig. 3 is a front elevation of the cultivator, the pole being shown in section, the section being taken on the line 3—3 of Fig. 1; and Fig. 4 is a transverse vertical section taken practically on the line 4—4 of Fig. 1.

In carrying out the invention the frame of the machine may be said to consist of two beams A and B, forward arches 10 and 11, rear arches 12 and 13, front and rear guide plates 14 and 15, receiving the crown or body of the arches, and a socket 16, carried by the rear plate and adapted to receive the rear end of the tongue or pole 17. The beams A and B, are arranged opposite each other; they are horizontally located, and they are made to converge at their forward ends and diverge at their rear ends. As each beam is of like construction, and furthermore, as each beam carries disk cultivators in the same manner, the detailed description will be confined to one of them. Each beam consists of two parallel and spaced bars 18 and 19, the extremities of both of the bars being placed at an angle to the body, the body of the beams occupying a diagonal position with respect to the extremities, the extremities being made straight; and the forward extremities are designated as *a*, while the rear extremities are designated as *a'*. The bars 18 and 19, are connected near the forward and rear ends of their body portions by means of cross bars

20, which cross bars are provided with an outwardly extending central eye 21. A boxing C, is located at the rear of the beam and a boxing C', is located at the front thereof. The rear boxing consists of a casing, comprising as is shown in Fig. 4, a body portion 22, which is hollow and provided at each side with a recess 23, and an upper socket 24, located transversely upon the body and a lower transverse socket 25, together with a rear socket 26, shown best in Figs. 1 and 2, which socket 26, is provided with a circular interior, while the remaining sockets, and likewise the interior of the body are made more or less rectangular. The eye 21 of the rear cross bar 20 of the beam is made longer than the interior of the body of the boxing C at the front thereof, and is pivotally held therein through the medium of a pin 27; and the rear end portions *a'* of the bars of the beams are made to enter the side recesses 23 in the body. Thus the beam may have more or less play in the boxing.

The forward boxing C', is identical with that shown and described with reference to the rear boxing C, with the exception that its outer or front socket, which is the equivalent of the rear socket 26 of the rear boxing, has a rectangular or polygonal interior and is designated as 26'; and the forward end of the beam is connected with the forward boxing in like manner as the rear end is attached to the rear boxing. Each beam is provided with a series of slides D, which are adapted to be moved longitudinally upon the side bars of the beam, or the body portion thereof. The construction of a slide is best shown in Fig. 4, in which it will be observed that the slide consists of an upper bar 29, a lower bar 30, and an upright bar 31 connecting the upper and lower bars back of the inner ends of the latter, the outer end portions of the upper and lower bars being connected by standards 32, which standards extend somewhat above the upper bar and are provided with bearings, the standards being placed at suitable intervals apart and being connected at their outer ends. In the standards of each slide a worm 33, is journaled, and as shown in Fig. 1, one end of the worm is squared to receive a wrench, as illustrated at 34 in the said figure. One side bar of a beam passes

between the upper and lower bars 29 and 30 of a socket, and in engagement with the inner upright bar 31, while the other and outer side bar of the beam passes through openings 5 35, produced in the standards; and after the slides have been properly adjusted upon the beams they are held in their adjusted position by set screws 36, which are passed up through the connecting bars of the slide standards to an engagement with the outer bar of the beam, as is likewise best shown in Fig. 4; but any equivalent of the said fastening device may be employed if in practice it is found desirable.

15 It will be observed that by reason of the peculiar construction of the slides a central open space 37, is obtained; and each standard is adapted to receive a shank 38 of a cultivator, and said shank which is preferably 20 round, is carried upward through the slide, being loosely mounted therein; and through this central space 37 the upper end of the shank extends a suitable distance above the upper face of the slide. Each shank is practically angular or L-shaped, as is clearly 25 shown in Fig. 4, the vertical member being mounted in a slide, while the horizontal member extends inwardly beneath the beam and is adapted to carry a disk cultivator E. The 30 shank of a disk cultivator is adapted for vertical adjustment in its slide, and likewise is adapted to be turned readily therein so as to cause the disk cultivator to enter the ground to a greater or less degree, and in order to give 35 it any desired inclination beneath the beam. The vertical adjustment is provided for by placing a collar 39 upon the vertical member of the shank within the opening 37 of its slide, the collar being provided with a suitable 40 set screw. Thus by lowering the set screw the shank may be raised or lowered and by tightening it the shank may be held in an adjusted position, and as the collar is located within the slide and loosely placed 45 therein the shank may be turned without the collar offering any resistance.

A rotary movement is imparted to the cultivator shank by securing upon the upper 50 end of the shank a mutilated or segmental gear 40, which is preferably secured thereon by means of a set screw, as shown in Fig. 1, and this gear meshes with the worm carried by the slide in which the shank is located. 55 Therefore, it will be observed that by manipulating the worm 33 the shank may be turned in whatever direction it is desired to place the disk E, which it carries.

The cultivator disk E, is of peculiar construction, and comprises a body 41, which is 60 of disk shape, provided with an opening at its center; and the disk is more or less cupped or rendered concave upon its inner face and convex upon its outer face. The disk is provided with a hub 42 and spokes 43 radiating 65 from the hub section to unite the latter with the body or disk section. The hub is

mounted loosely upon the horizontal member of a cultivator shank; and the cultivator is held upon the shank either by means of a nut, as shown in the drawings, or by screwing 70 a cap on the hub over the end of the shank, in which latter event all dust or dirt is excluded from the axle of the cultivator.

Any desired number of cultivators may be placed upon a beam, and the beams are connected 75 at the front by the arches 10 and 11 and at the rear by the arches 12 and 13. The arches at the front and rear are arranged one above the other. The arch 12, which is the upper arch, has its members carried down- 80 ward and outward in opposite directions and thence horizontally into the upper socket 24 of the rear boxing C, while the members of the lower arch 13, are carried in the same direction and made to enter the lower sockets 85 25 of the rear boxings. Each arch is made in two sections, as shown in Fig. 4, one section being connected with the rear boxing of each beam, while the upper ends of the arch sections are made to enter sockets produced in 90 the upper and lower portions of the guide plates 15, the said sockets being designated in the drawings as 15^a. Therefore, when two beams have been coupled together by the rear arches the space between them may be 95 enlarged or lessened by adjusting the arch sections in their sockets; and after the adjustment has been made the arch sections are held firmly in their sockets by means of set screws 43, or the equivalent thereof, as shown 100 in Fig. 3.

The front portions of the beams A and B, are connected in like manner as the rear portions by means of the front arches 10 and 11, 105 which are similarly disposed to the rear arches, the sockets in the front guide plate 14, however, being designated in the drawings as 14^a. The guide plates are connected by brace rods 44, which are passed from plate to plate, entering said plates between their upper and 110 lower sockets, the guide rods being provided with suitable lock and check nuts. Ordinarily two guide rods are employed, one being located at each side of the center of the plate. The sockets of the front and rear plates face 115 each other, as shown in Fig. 2; and upon the front plate at its center ears 45, are located, and between said ears the pole or tongue 17 of the machine is pivoted, while the rear or butt end of the pole or tongue is made to enter 120 the box or socket 16, secured to the central portion of the rear arch guide plate 15 upon the forward face of said plate; and as shown particularly in Figs. 2 and 4, this box, which is open at its front, extends some distance 125 upward beyond the said plate 15; therefore, the tongue 17 has free and guided movement in the box 16, which is of a width just sufficient to freely admit the tongue or pole; and when the machine is drawn over undulating or rough ground the rear end of the 130 pole will ascend or descend, moving freely in

its box 16, and therefore there will be no unnecessary strain upon the team, the machine accommodating itself to the inequalities of the ground while the pole or tongue will accommodate itself to the motion of the team. It is necessary, however, in turning corners and on some occasions, to hold the tongue or pole in a rigid position, and this is preferably accomplished by mounting upon the top of the box 16 a lever 46, and connecting that lever with the pole or tongue near its rear end by an arched link 47, whereby when the lever is pressed downward and rearward until the link has passed its center, the pole or tongue will be locked firmly in the box, and it may be as conveniently released by throwing the lever 46 upward.

The machine is supported upon two rear wheels 48, and these wheels are mounted upon crank axles 49, each axle being independent; and each crank axle is journaled in the rear socket 26 of the rear boxing C. The beams, therefore, may be raised or lowered by the manipulation of these axles, and this is accomplished through the medium of levers 49^a, which are secured preferably to the inner ends of the axles, the said levers being provided with thumb latches 50, adapted to enter racks 51, secured in any suitable or approved manner upon the rear boxings, as shown in both Figs. 1 and 4. The forward sockets 26^a of the forward boxings C', are adapted for use when two or more of the cultivators are to be coupled together to work in gangs, as it is evident that this may be readily accomplished; and it is furthermore evident that the beams of each cultivator may be brought as close together as in practice may be found desirable. Ordinarily the disk cultivators are held in a diagonal position beneath the beams carrying them, and the angle or inclination may be readily changed by operating the worms 33. It will be understood that the worms may be placed upon the inner side of the frame instead of the outer side, if found more desirable. Having thus described my invention, I

claim as new and desire to secure by Letters Patent—

1. In a cultivator, the combination, with a beam and a slide having movement upon the beam, of a shank loosely mounted in the slide, and a gear connection between the slide and the shank, whereby the latter is revolved, as and for the purpose specified. 50

2. In a cultivator, the combination, with a slide, of a cultivator shank carried by the slide and having vertical adjustment therein, and a gear connected with the shank, whereby the latter may be revolved, as and for the purpose specified. 55 60

3. In a cultivator, the combination, with a beam, slides located upon the beam, shanks extending upward through the slides, a collar adjustably carried by each shank within its slide, and a gearing connected with the shank whereby the shank is both vertically adjustable and rotatable, of a disk cultivator mounted to turn upon each of the shanks, as and for the purpose specified. 65

4. In a cultivator, the combination, with beams adapted to carry cultivator blades, and arches connecting the beams, of a tongue or pole pivotally supported upon the forward arch, a box carried by the rear arch, in which the end of the beam has movement, a lever carried by the box, and a link connection between the lever and the pole or tongue, as and for the purpose set forth. 70 75

5. In a cultivator, the combination, with beams arranged at angles to each other, and boxes located at the ends of the beams, the beams being in pivotal engagement with the boxes, of arches adjustably connecting the forward and rear boxes, and cultivators carried by the beams, the said cultivators being capable of vertical and lateral adjustment, substantially as shown and described. 80 85

AUGUST LEINEWEBER.

Witnesses:

DANIEL CAVE,
JOSEPH R. NELSON.