(No Model.) 2 Sheets—Sheet 1.

O. L. NEISLER.

CULTIVATOR.

No. 517,289. Patented Mar. 27, 1894.

Fig. 1.

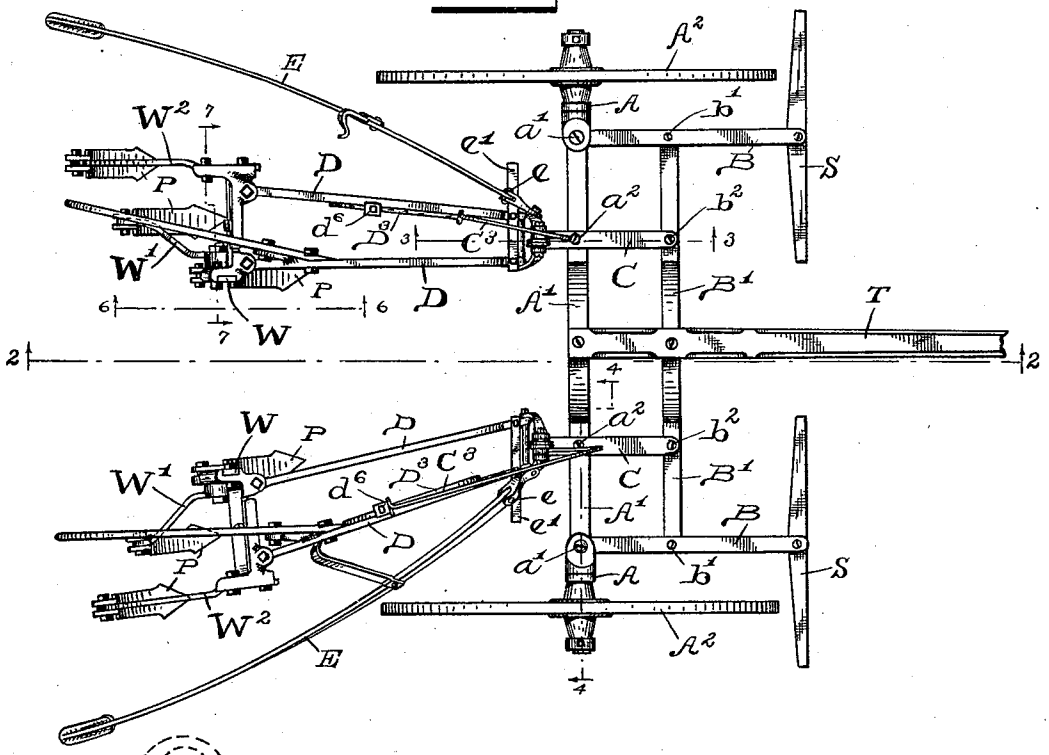
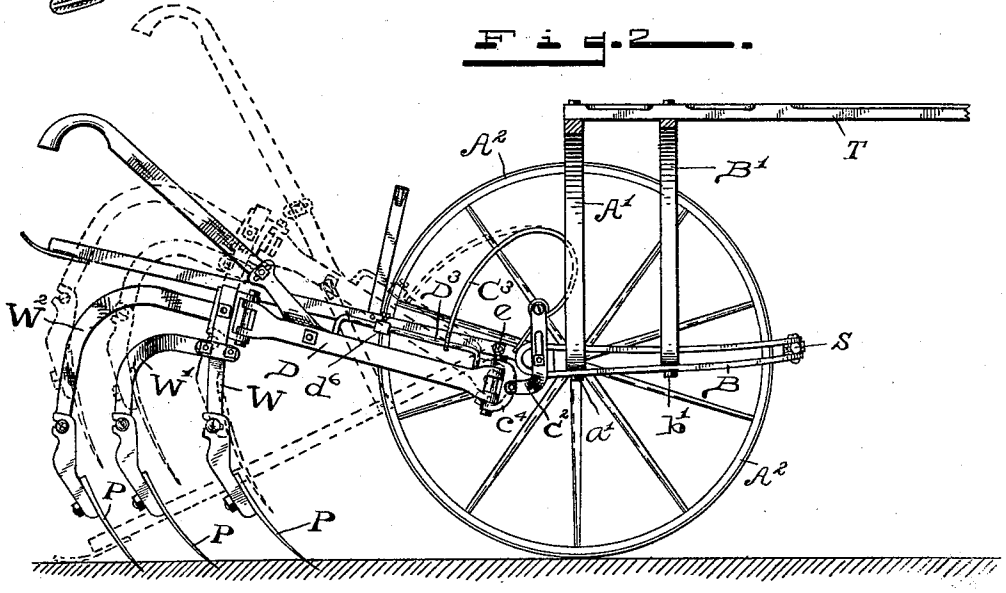


Fig. 2.



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(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

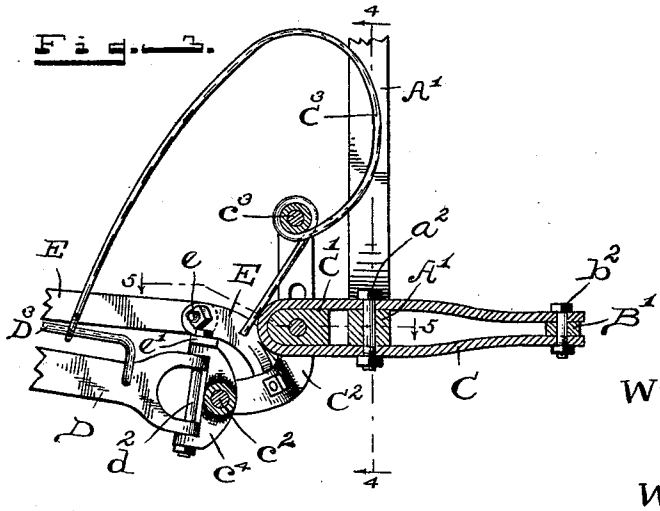


Fig. 6.

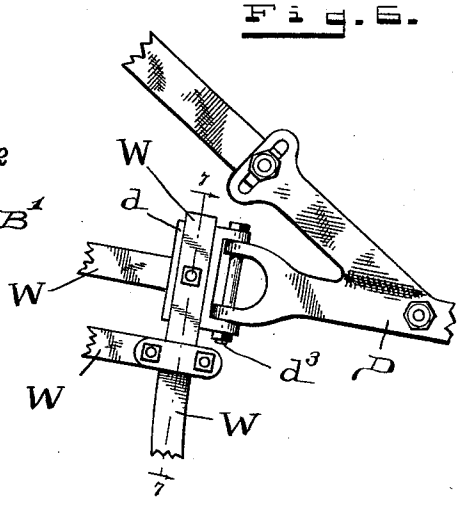


Fig. 4.

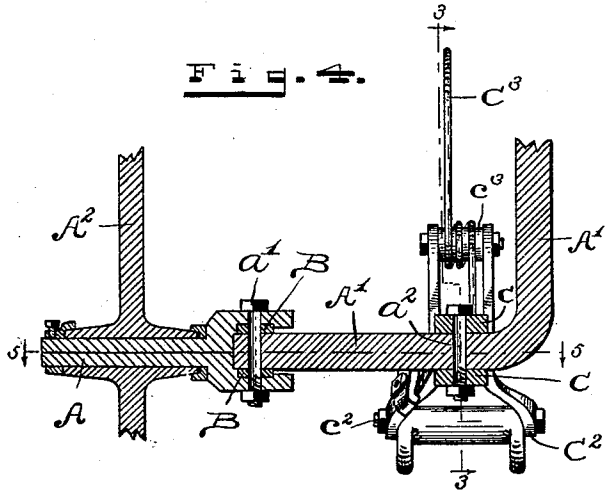


Fig. 7.

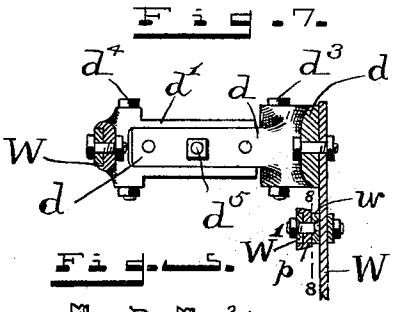


Fig. 8.

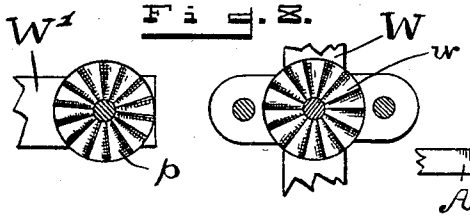
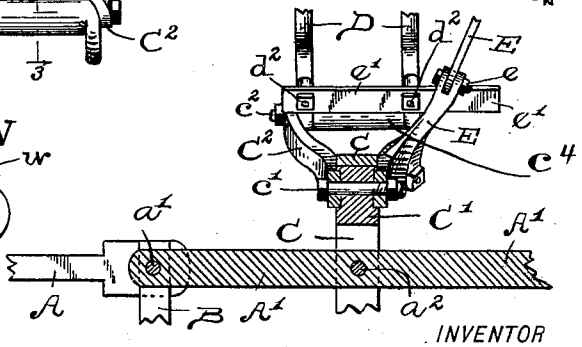


Fig. 5.



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UNITED STATES PATENT OFFICE.

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CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 517,289, dated March 27, 1894.

Application filed May 2, 1893. Serial No. 472,713. (No model.)

To all whom it may concern:

Be it known that I, OSCAR L. NEISLER, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Cultivators, of which the following is a specification.

Referring to the accompanying drawings, which are made a part hereof, and on which similar letters of reference indicate similar parts, Figure 1 is a top or plan view of a cultivator embodying my said invention; Fig. 2 a central sectional view of the same, as seen from the dotted line 2 2 in Fig. 1; Fig. 3 a detail sectional view, on an enlarged scale, on the dotted line 3 3 in Figs. 1 and 4; Fig. 4 a detail sectional view, also on an enlarged scale, on the dotted line 4 4 in Fig. 1; Fig. 5 a detail sectional view on the dotted line 5 5 in Fig. 4; Fig. 6 a view as seen from the dotted line 6 6 in Fig. 1; Fig. 7 a view as seen from the dotted line 7 7 in Figs. 1 and 6, and Fig. 8 a view on a still further enlarged scale, looking in both directions from the dotted line 8 8 in Fig. 7.

In said drawings the portions marked A represent the stub-axles on which the wheels are mounted; B the draft-bars; C the plow-beam bars to which the plow-beams and drag-bars are attached; D said plow-beams, and E the drag-bars. The stub-axles A are preferably formed in two parts, as shown most plainly in Fig. 4, and carry the usual wheels A^2, and are rigidly attached to the draft-bars B. The draft-bars are shown as divided, and the members of said draft-bars are shown as seated in recesses in the inner ends of these stub-axles, which is a construction that secures the desired rigidity in a superior manner. The arches A′ and B′ are secured between the members of the draft-bars by pivots a' and b', and the former of these pivots or pivot-bolts passes through and secures together the three parts A, B and A′, and the latter secures together the parts B, B′ and C. The arches A′ and B′ are parallel, and are secured to the bars B and C at the four points a' b' a^2 b^2 upon each side. As all these points are pivot points, the wheels are enabled to advance and recede relatively to each other without throwing either of the parts B and C out of the direct line forward, the result being simply to throw the arches A′ and B′ at an angle relatively to said bars B and C. The point of attachment of the draft-bars B being much nearer the wheels than the points of attachment of the plow-beam bars C, it will be readily seen that the variation of advance movement between the draft-bars is much more than between the plow-beam bars, and thus the animals drawing the cultivator may travel quite unevenly without varying the relative position of the plows seriously, and this is a leading feature of my invention.

My cultivator, as shown, is a combination cultivator adapted to be used either as a tongue cultivator or a tongueless cultivator, and is furnished with both a tongue, T, and the drag-bars. When the tongue is used, the drag-bars are detached, and vice versa, and it obviously can be used either way, as desired. I shall, however, describe it as used with the drag-bars, and the tongue will not be further described, except to say that when used it is attached by pivot-bolts, and is made easily removable for convenience. The draft-bars B are rigidly attached to the stub-axles A, and pivotally attached to the arches A′ and B′, and carry the single-trees S at their forward ends, to which the animals are attached. As will be readily observed, each one operates upon the side of the cultivator to which it is attached, independently of the other. The plow-beam bars C are attached to the arches A′ and B′ by the pivots a^2 and b^2, in the same manner that the draft-bars are attached by their pivots at the rear end, as shown most plainly in Fig. 3. Blocks C′ are secured in these plow-beam bars, and to said blocks are secured the vertically adjustable clevises C^2, which are the direct means of attachment of the plow-beams and drag-bars. The clevises C^2 are seated in recesses in the sides of the blocks C′, as shown in Fig. 5, and are thus maintained in upright position, being held in said recesses by the bolts c'. By loosening said pivot bolts these clevises can be moved vertically, as desired, and thus position the plows for shallower or deeper work, and at the same time vary the tension of the springs C^3, as will be presently more fully described. The union between the clevises and the plow-beams is made by means of the two bolts c^2 and d^2 and the block c^4, which gives

the plow-beams a free movement, both vertically and laterally, enabling them to swing in any direction desired. The plow-beams D in themselves are or may be of any desired construction, and are arranged in pairs or sets. They are pivoted at their front ends, as has just been described, to the clevises C^2, and at their rear ends are united to two-part cross-heads d d' by bolts d^3 d^4, the parts of said cross-heads being adjustable upon each other, as shown most plainly in Fig. 7, and which are secured together by bolts d^5. Secured to one of each of said sets of plow-beams is a slide D^3 to which the forward end of the corresponding spring C^3 is connected, said spring being mounted upon the bearing c^3 at the upper end of the clevis C^2, as shown most plainly in Figs. 3 and 4. Upon the slides D^3 are regulating stops d^6, which limit the movement of the springs C^3 thereon. These springs C^3 serve a double purpose. When extending out toward the rear of the slide, they serve to sustain the weight of the plows, and assist in raising them when they are lifted onto the drag-bars to be held out of use, or for transportation. When, however, it is desired to use the cultivator in hard ground, where an extra pressure upon the earth is necessary, these springs C^3 are forced forward close to the front ends of the slides D^3, and when in this position they exert a downward pressure upon the plow-beams, thus giving to a stiff plow-beam the advantages of a spring operation. The springs are held to this position when they are so placed by means of the adjustable regulating stops d^6. These springs are given a greater or less force by the adjustment of the clevises C^2. Obviously, the plows require a greater amount of spring pressure when plowing deep than when plowing shallow, and the downward adjustment of the clevises shortens the distance between the bearings of the spring, as will be readily understood by an examination of Figs. 2 and 3, and thus, of course, gives the spring greater force, while raising the clevises as obviously lengthens the distance between the bearing points, and lightens the pressure of the spring. The clevises C^2 also carry the drag-bars E, which are connected thereto by arms E′ projecting therefrom, and to which said drag-bars are immediately united by pivot-bolts e. The positions of these pivots are immediately above the blocks c^4, and upon the top of said blocks are rigidly secured arms e' extending transversely across and below the joints of the drag-bars. These parts are so positioned relatively that when the plow-beams are raised the arms e' will pass in front of the pivots e and permit the drag-bars to drop to the ground; but when the plow-beams D are brought down into position for the plows to operate, the arms e' are drawn back under said pivot-bolts, and sufficiently to the rear thereof, to raise said drag-bars out of contact with the ground. These several parts in their two positions are shown respectively by the dotted and full lines in Fig. 2. It will thus be seen that the drag-bars automatically assume that position which the use of the cultivator requires, as said cultivator itself is changed from one position to the other. At the rear, as shown most plainly in Figs. 1, 6 and 7, are several plow-shanks W and W^2 carrying the shovels or plows P upon the lower end. I have devised a means whereby these shanks may be varied, both in number and position, to suit the requirements of the work being done. Commonly, one shank is attached immediately or substantially in the rear of each plow-beam and carries its plow, said shanks being seated, respectively, in recesses in the opposite ends of the parts d and d' of the couplings by which the plow-beams are united at the rear end. To provide additional plows I make use of additional shanks W′ terminating at the upper end in clamps adapted to be secured to the main shanks, as shown most plainly in Figs. 2, 6 and 7. Obviously, these can be secured at any point up and down on said shanks that may be desired, and I have also provided a means whereby they may be adjusted back and forth. These clamps are divided into two parts w p the faces of which are serrated, as shown in Fig. 8, and these parts may, of course, be revolved one upon the other, giving the required adjustment.

Having thus fully described my said invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, in a cultivator, of stub axles A, draft bars B rigidly secured thereto, an arched axle A′ secured both to the stub axles and the draft bars by pivots a', plow-beam bars C connected to the arched axles A′ by the pivot bolts a^2, and a second arched axle B′ connected to the draft bars B by pivots b', and to the plow-beam bars C by pivots b^2, and plow-beams connected to said plow-beam bars, substantially as shown and described.

2. The combination, in a cultivator, of stub axles consisting of two parts, two bars seated in recesses in the respective parts of the stub axle, and arches A′ and B′ secured between the members of the draft bars by pivots a' and b', and plow-beam bars also secured to said arches by corresponding pivots, substantially as shown and described.

3. The combination, in a cultivator, of the plow-beam bars C formed with a slot or way between the upper and lower members and secured to the axle by pivots a^2, the blocks C′ also secured within the slots or ways in said plow-beam bars, clevises vertically adjustably secured to said blocks, and the blocks c^4 provided with two pivot bolts c^2 and d^2 whereby the said clevises are connected to the plow beams, substantially as set forth.

4. The combination, in a cultivator, of the plow beams, the axles, the plow-beam bars, blocks C′ secured in the plow beam bars, vertically adjustable clevises C^2 secured upon said blocks by means of recesses and bolts, blocks c^4 secured to the lower ends of the clevises,

and bolts or pivots c^2 and d^2 for uniting said parts and plow beams, substantially as set forth.

5. The combination, in a cultivator, of plow-beam bars, clevises to which the plow-beams are united, springs mounted upon the upper ends of said clevises and extending back and connected to slides on said plow-beams, substantially as shown and described.

6. The combination, in a cultivator, of the plow-beam bars, clevises adjustably mounted thereon, plow-beams pivotally connected to the clevises, slides on said plow-beams, and springs mounted upon the upper ends of the clevises and extending to and coupled onto the slides, the lower ends of the springs resting against the plow-beam bars, whereby, as the parts are adjusted, the tension of the springs are varied, substantially as set forth.

7. The combination, in a cultivator, of plow-beams pivotally attached, and having transverse arms secured to the means of attachment near the pivots, drag-bars pivotally attached at or near the same points, the pivots being so positioned that as the plow-beams are raised said arms will pass from under said drag-bars permitting them to fall, and when the plow-beams are lowered said arms will be drawn back under the drag-bars, thus raising them, substantially as and for the purpose set forth.

8. The combination, in a cultivator, of the plow beams united at their rear ends by two-part cross-heads d and d', plow shanks attached thereto and seated in recesses in the opposite ends of the parts d and d', supplemental or additional plow shanks W′ terminating at the upper end in two part collars w p the faces of which are serrated, and bolts securing the same together, said several parts being arranged and operating substantially as set forth.

In witness whereof I have hereunto set my hand and seal, at Indianapolis, Indiana, this 29th day of April, A. D. 1893.

OSCAR L. NEISLER. [L. S.]

Witnesses:
CHESTER BRADFORD,
JAMES A. WALSH.