

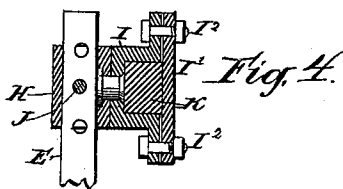
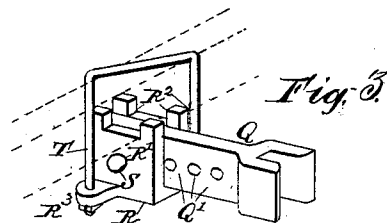
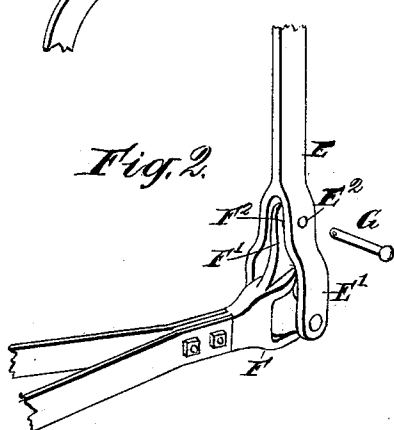
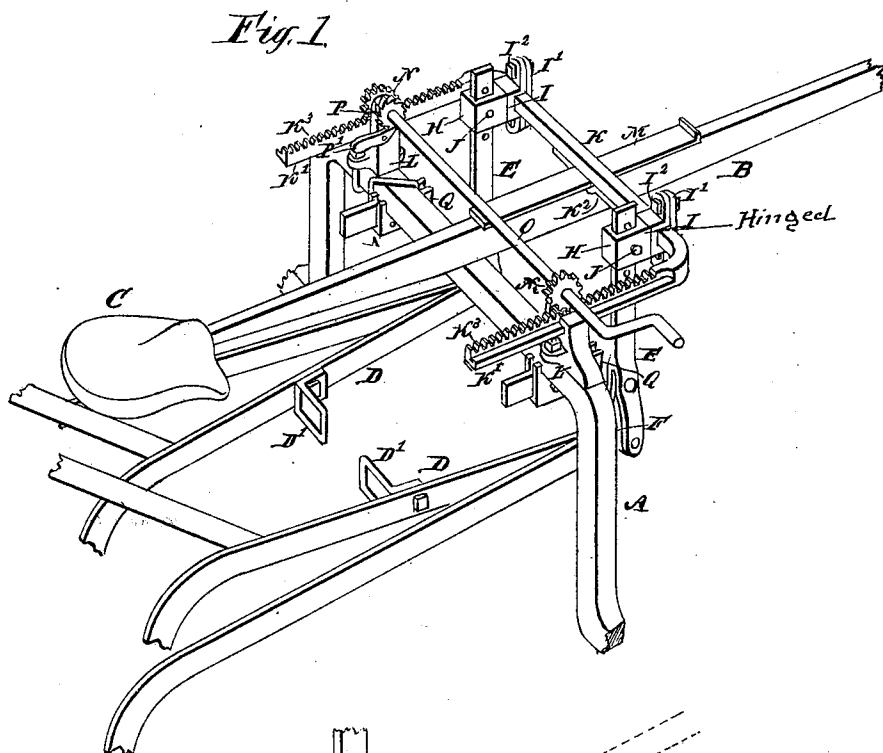
No. 631,444.

Patented Aug. 22, 1899.

**E. SAWYER.
CULTIVATOR.**

(Application filed June 13, 1899.)

(No Model.)



Attest

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UNITED STATES PATENT OFFICE.

ELWIN SAWYER, OF NEAR CLARENCE, IOWA.

GULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 631,444, dated August 22, 1899.

Application filed June 13, 1899. Serial No. 720,388. (No model.)

To all whom it may concern:

Be it known that I, ELWIN SAWYER, a citizen of the United States, residing near Clarence, in the county of Cedar and State of Iowa, have invented certain new and useful Improvements in Cultivators; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The object of this invention is to so construct a cultivator that it may be quickly and conveniently adapted for use either in riding or walking.

The nature of the invention will fully appear from the description and claims following, reference being had to the accompanying drawings, in which—

Figure 1 is a fragmentary view of a cultivator embodying my improvements as seen in perspective from the rear. Fig. 2 is a similar fragmentary view showing the connection of the beam with the vertical standard at the front end thereof. Fig. 3 is a front view in perspective of the fork for holding this front standard rigidly in position when the operator desires to walk and so adjusts the machine. Fig. 4 is a central vertical section of an adjustable hinged connection of the standard with a yoke adapted to shift the beams back and forth.

Similar letters of reference indicate corresponding parts.

The invention is designed to utilize in a single machine two different principles in the mounting of the plow-beams and render it practicable to use either at will by a simple adjustment easily and quickly made. For a walking-cultivator the plow-beams are best mounted by a universal joint at the front end, thus allowing the beam to swing freely in any direction from a common center at the front end; but in mounting the beams for a riding-cultivator it is desirable that the whole beam swing bodily in a vertical plane transverse to the cultivator, so that when moved by the foot of the operator the forward shovels travel as far as the rear shovels. The means by which these principles are made operative will now be described.

Referring to the drawings, A denotes the arch, which is supposed to be provided with

wheels. (Not shown.) To this arch is suitably connected the tongue B, to which may be applied any appropriate draft apparatus. (Not shown.) At some distance back of the arch is mounted a seat C for the operator, the support for said seat in this case being a rearward extension of the tongue, though the mounting of the seat may be such as convenience or economy may suggest.

The beams D D connect at their forward ends with upright standards E E by universal joints F F. Provision is made, however, for locking the parts at this point, so as to produce a practically rigid beam in connection with the standard. This is effected by the simple mechanism shown in Fig. 2. F' is an upward extension of the stirrup F, passing between the legs of the forked end of the standard E'. The standard and this extension are provided with coinciding holes E² and F², respectively, and the parts are locked by a pin G, fitting said holes. When so secured, the whole beam swings bodily sidewise as moved by the foot of the operator in the stirrups D'.

The upper ends of the standards E are adjustably mounted in guide-block H, hinged to clamp-irons I and I'. A pin J, fitting holes in the guide-block and standard, secures the latter in any desired position vertically. So mounted the beam can swing only in one direction—sidewise.

The clamp-blocks I I' are laterally adjustable by means of suitable bolts I² on the front and transverse portion of a yoke K, mounted on the arch and tongue. This yoke is adapted to slide in a practically horizontal plane, suitable guide-bearings L L being secured to the arch to retain the lateral members of the yoke K' and the front of the yoke being gibbed at K² to a guide-plate M, secured to the top of the tongue. A simple and efficient method of shifting the yoke back and forth is shown in Fig. 1. A rack K³ is formed on each of the members K', and these racks engage with pinions N, mounted on a crank-shaft O, journaled in the guide-bearings L L. A ratchet and pawl P P' serve to hold the yoke from being drawn backwardly by the shovels when in use.

To the arch adjacent to the guide-bearings are secured two forks Q, adapted to engage

the standards E E when drawn back to the position they occupy when used as a walking-cultivator, it being desirable to secure the standards in a rigid position at such times.

5 These forks are made adjustable back and forth, so that the position of the beams may be adjusted to any desired point for walking use. A simple manner of adjustment is shown in Fig. 3. The shank of the fork is provided

10 with a series of holes Q' and fits to slide in a clamp-block R, provided with a coinciding hole R'. A pin S fastens the parts in position. The clamp-block has upwardly-projecting lugs R² to engage the sides of the arch,

15 and lateral lugs R³ to take a stirrup T, by which it is clipped to the arch. The lateral adjustment of these forks is of course made to correspond with the positions of the guide-block H on the yoke.

20 The operation of the machine will now be understood. As shown in Fig. 1, the cultivator is in position for riding. In case a heavier operator were to occupy the seat the yoke would be moved farther forward, so as to

25 counterbalance the added weight. The front ends of the beams, as will be seen, are locked rigidly to the standards E E, and the whole beam may swing sidewise by the pressure of the operator's foot. When tired of riding,

30 he has only to dismount, draw out the pins G G, and set the yoke back to the limit of its movement in this direction, the standards engaging the forks Q Q, when the cultivator is perfectly adapted for walking. It thus be-

35 comes possible to alternate in the use of the machine, and the comfort of the operator is greatly enhanced.

Having thus described my invention, what I claim as new, and desire to secure by Letters

40 Patent, is—

1. In a cultivator, the combination with an arch, the beams and tongue, substantially as described, of a stirrup-shaped yoke mounted on the arch and tongue, guide-bearings on the

45 arch for the side members of the yoke, and a guide-plate on the tongue for the transverse part thereof, substantially as and for the purpose set forth.

2. In a cultivator, the combination with the

50 arch, beams and tongue, substantially as described, of a stirrup-shaped yoke mounted in bearings on the arch and tongue, racks formed on the lateral members of the yoke, pinions engaging with said racks, and a crank-shaft

55 to rotate said pinions, with means substantially as described for holding the same in any desired position.

3. In a cultivator, the combination with an arch, the beams and tongue, and an adjust-

able, beam-holding yoke mounted thereon, of

60 vertical standards connecting with the front ends of the beams and a hinged connection of the upper ends of said standards adapted to permit them to swing in a vertical plane

65 transverse to the tongue.

4. In a cultivator, the combination with the arch, beams and tongue, and an adjustable, beam-supporting yoke mounted thereon, of

70 standards connecting with the front ends of the beams, guide-blocks to retain their upper ends, clamp-blocks adjustably connecting with the front part of the yoke, and a hinged connection of the guide and clamp blocks, substantially as and for the purpose set forth.

5. In a cultivator, the combination with the

75 arch, beams and tongue, and an adjustable yoke mounted thereon, of vertical standards connecting the front ends of the beams with the front part of the yoke, and forks connecting with the arch and adapted to engage the

80 said standards and hold them rigidly vertical when adjusted to the rearward position.

6. In a cultivator, the combination with the arch, beams, tongue, adjustable yoke and

85 vertical standards connecting the front ends of the beams with said yoke, of a pair of forks to engage said standards when set back, clamp-blocks to retain the shanks of said forks, and by means of which they are clipped to the

90 arch, and means substantially as described for adjusting the forks backwardly or forwardly.

7. In a cultivator, the combination with a plow-beam thereof, of a vertical standard connecting its front end with the cultivator-

95 frame, a universal joint connecting the beam and standard, and means substantially as described for locking said joint to make a rigid connection of the beam and standard, for the purpose set forth.

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8. In a cultivator, the combination with a cultivator-frame adjustable to both walking and riding, substantially as described, of a plow-beam therefor, a standard connecting

105 the front end of said beam with the frame, the standard terminating at its lower end in a fork, a universal-joint connection of the beam with said fork, an extension of said joint, holes through the fork and said extension, and a locking-pin therefor, substantially

110 as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

ELWIN SAWYER.

Witnesses:

J. H. ENGLISH,
M. H. BURTON.