(No Model.)

E. R. CONKLIN.

CULTIVATOR.

No. 384,347. Patented June 12, 1888.

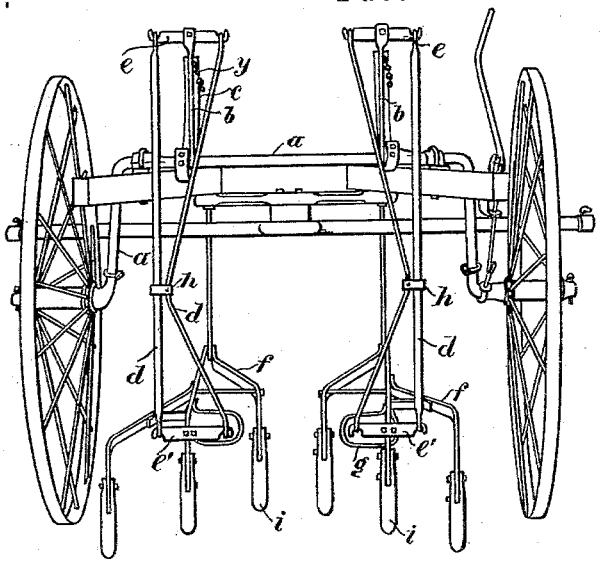

Fig. 1.

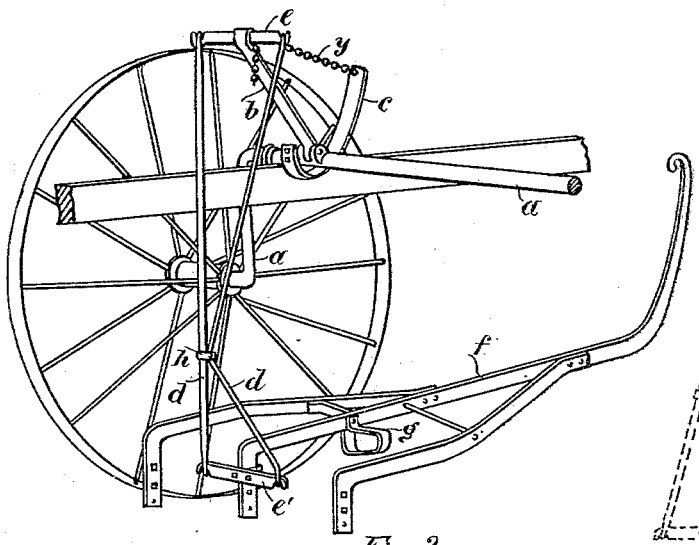

Fig. 2.

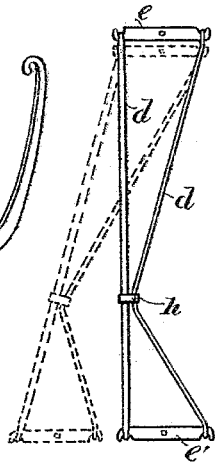

Fig. 3.

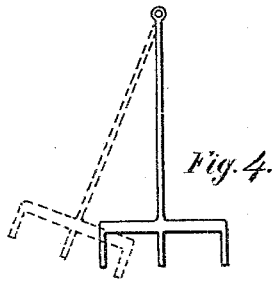

Fig. 4.

Witnesses.
L. G. Welker.
H. W. Brown.

Inventor:
Edward R. Conklin.
By Munn & Hall,
Attorney.

N. PETERS. Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

EDWARD R. CONKLIN, OF WAUSEON, OHIO.

CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 384,347, dated June 12, 1888.

Application filed December 17, 1887. Serial No. 258,197. (No model.)

To all whom it may concern:

Be it known that I, EDWARD R. CONKLIN, a citizen of the United States, residing at Wauseon, Fulton county, Ohio, have invented a certain new and useful Improvement in Cultivators, of which the following is a specification.

My invention relates to wheeled or sulky cultivators, and more particularly to a device for securing uniformity in the depth of cut of the shovels or teeth of the cultivator.

In that class of cultivators in which the rear end of the two shovel-beams is suspended and supported by rods, by means of which the shovel-beams are raised and lowered, and which also permit the shovel-beams to swing horizontally, there has heretofore been used a single supporting-rod for each set of shovels or teeth. The driver rides with his feet resting on these shovel-beams, and thus causes either of the two sets of shovels to swing either to the right or left, so as to avoid obstructions or to follow any irregularities in the corn-rows. When these rods supporting the shovel-beams hang vertically, the points of the teeth or shovels are in a horizontal plane; but if the shovel-beams be thrown outwardly the shovels at the inner side of the beam will dip deeper into the ground, while the shovels at the outer side of the beam will tilt upwardly, leaving the ground entirely. If the shovel-beams be swung inwardly, the reverse result takes place, the outer shovels dipping deeper and the inner shovels being thrown out of the ground.

The object of my invention is to overcome this fault in cultivators and to secure uniformity in the work of the shovels or teeth. I attain this object by means of the device illustrated in the accompanying drawings, made part hereof, in which—

Figure 1 is a rear view of a cultivator provided with my invention; Fig. 2, a side view from the center of one-half of a cultivator, showing my device with its supports and spring; Fig. 3, a diagram of the motion of my device, and Fig. 4 a diagram showing tendency of shovels without my improvement.

Like letters represent like parts in all the views.

In the drawings, *a* is the axle of the machine, provided with two standards, *b*, pivoted thereon, and two springs, *c*, attached rigidly thereto. The upper end of standard *b* is connected with spring *c* by means of chain *y*, a link of which engages a hook on the upper end of standard *b*, the position of the standard being thus, by means of the hook and links, adjustable. Each of the standards *b* is provided at its upper end with a horizontal cross-arm, *e*, attached rigidly thereto, the cross-arms terminating at either end in a hook. From these hooks are suspended two pairs of supporting-rods, *d*, by means of eyes on the upper end thereof or other suitable device. At their lower ends supporting-rods *d* engage the ends of another horizontal cross-arm, *e'*, which supports the rear end of the plow beam or frame *f*, carrying the shovels or teeth. The attachments at both ends of rods *d* form joints which permit the swaying of the plow-beams to the right and left. If rods *d* were straight, they would be about parallel with each other, in whatever position they might be placed in their vertical plane, the cross-arms always retaining their horizontal position. I prefer, however, to bend the inner rod of each pair of supporting-rods in the manner shown in the drawings, so that the bent rod touches the straight rod, or nearly so, providing a space for the legs of the operator, who sits behind the supporting-rods with his feet in stirrups *g*. To insure accuracy of movement, a ferrule or band, *h*, is formed around each pair of rods *d* at the point where they touch each other, the band *h* being made fast to the bent rod, the straight rod sliding through the loop thus formed.

It will be observed that with the bent rods *d* the device operates with the same result as if the rods *d* were all straight and parallel, the lower cross-arm, *e'*, with its attached shovel or plow beam or frame *f*, being always held in a horizontal position in either case.

The operation of the device is obvious. The shovels or teeth *i* being lowered to the ground by any suitable device, the driver being seated with his feet in the stirrups, and the machine in motion forward, as it becomes desirable to throw either of the beams with its shovels either to the right or left, the proper foot is moved in the proper direction, the straight rod slides upon the bent one, the ends of the rods preserve their relative positions and distances, cross-arms *e'*, with their shovel-beams and shovels, remain horizontal without tilting

into or out of the ground, while the slight pressure of the foot which throws the beam either to the right or left causes spring *c* to yield, lowering the rods *d* sufficiently to compensate for the slight rise of their lower ends in traveling through the segment which they tend to describe. Thus the shovels are at all times kept on a level and are made to cut to a uniform depth.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a cultivator, the combination, with the axle and plow-beam, of supporting-rods in twos or pairs, pivoted to said axle and plow-beam, whereby the plow may be swung from side to side and the horizontal position of the shovels be maintained, substantially as shown and described, for the purpose specified.

2. In a cultivator, the herein-described means of preserving the horizontal position of the shovels, consisting of vertical supporting-rods in pairs, pivoted at their upper ends to cross-arms rigid upon the axle or axle-frame and at their lower ends pivoted to cross-arms rigid upon the plow frame or beam, substantially as shown and described, for the purpose specified.

3. In a cultivator, the combination, with the axle and plow-beam, of supporting-rods in pairs, the horizontal cross-arms at both ends of said rods, pivoted standard, spring, and chain, substantially as shown and described, for the purpose specified.

4. In a cultivator, in combination with the axle and plow-beam, a pair of equalizing supporting-rods, one of said rods being bent or curved, substantially as and for the purpose specified.

5. The combination of upper cross-arm, *e*, and its supporting mechanism, lower cross-arm, *e'*, and the plow-beam, with supporting rods *d* and band or ferrule *h*, substantially as and for the purpose specified.

EDWARD R. CONKLIN.

Witnesses:
W. F. GOODSPEED,
EDWARD H. SMITH.