E. C. WINTERS.

Revolving Cultivator.

No. 163,346. Patented May 18, 1875.

Fig. 1

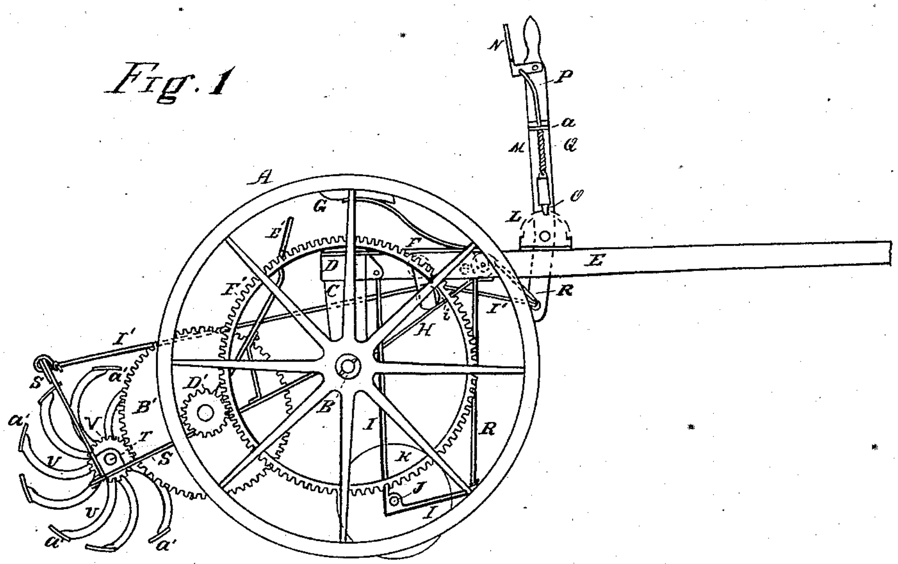
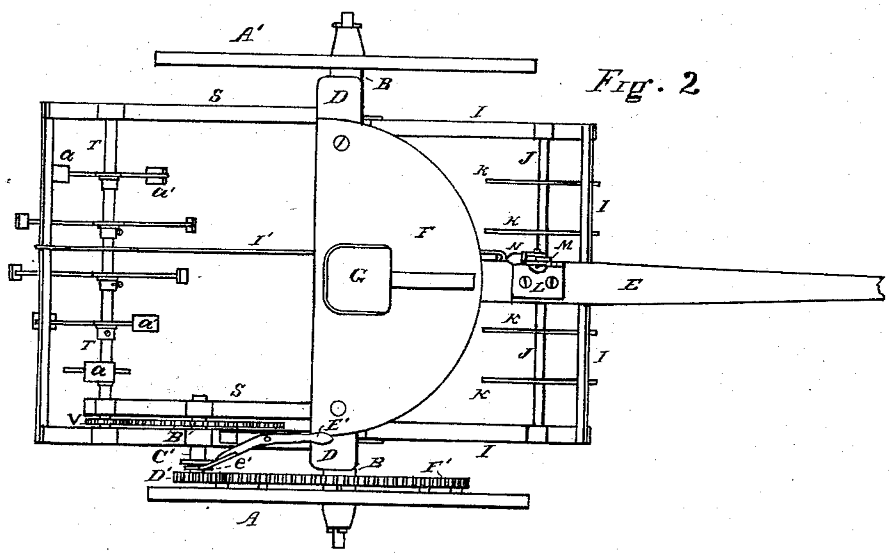


Fig. 2



WITNESSES

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ELHANAN C. WINTERS, OF COLETA, ILLINOIS.

IMPROVEMENT IN REVOLVING CULTIVATORS.

Specification forming part of Letters Patent No. **163,346**, dated May 18, 1875; application filed February 3, 1875.

To all whom it may concern:

Be it known that I, ELHANAN C. WINTERS, of Coleta, in the county of Whitesides and State of Illinois, have invented a new, useful, and Improved Revolving Spader or Cultivator, of which the following is a full, clear, and exact description, which will enable others skilled in the art to which my invention appertains to make and use the same, reference being had to the accompanying drawing forming a part hereof, and in which—

Figure 1 represents a side elevation of my improved spader or cultivator, and Fig. 2 a top view thereof.

Like letters of reference indicate like parts.

In the drawing, A A′ represent the draft-wheels, and B is an axle, on which they are freely mounted. C C are supports, through which the axle passes freely. D is a cross-bar attached to the supports C C. E is the tongue attached to the bar D. F is a platform, and G is the driver's seat. H H are braces attached to the tongue and to the axle. I is a swinging frame, suspended from supports on the bar D. J is a shaft or rod turning freely in bearings in the frame I, and K K are colters mounted on the rod J, and preferably laterally adjustable thereon. L is a semicircular plate arranged vertically on the tongue E, and having a serrated or notched edge, as shown. M is a vertical lever pivoted to the plate L. N is a bent lever pivoted to the lever M. O is a sliding catch arranged to engage the notches in the plate L. This catch is retained in a vertical position by means of a box, staple, or guide on the lever M, as represented in Fig. 1. P is a small wire, rod, or cord attached to the lever N and to the catch O. Q is an open spiral spring resting against the upper end of the catch O and against a leaf or stop, *a*, projecting from the lever M. The part P passes through this stop and through the spring. R is a cord attached to the lever M and to the frame I. This cord passes over a pulley or roller, *e*. S is a frame mounted freely on the axle, and T is a rod or shaft turning freely in bearings in the frame S. U U are S-shaped arms mounted on the rod T, and preferably laterally adjustable thereon, the rod passing through the central part of the arms, as shown. The ends of these arms are provided with shovel-shaped instruments, *a′ a′*, and the arms are so arranged that these implements will lie in a spiral line. V is a pinion on the rod or shaft T. B′ is a spur-wheel engaging the pinion V and mounted on the shaft or arbor C′, which rests in bearings on the frame S. D′ is a sliding pinion on the arbor C′. This pinion is provided with a grooved hub, *e′*. E′ is a forked lever pivoted to a standard projecting from the frame S. This lever is capable of being moved laterally, and its forked end rests in the groove of the hub *e′*. F′ is a spur-wheel carried by the wheel A and engaging the pinion D′. I′ is a cord attached to the frame S and to the lever M. *i* is roller supporting the cord I′.

In order to use my improved implement the team is hitched to the draft-pole in the usual manner. The driver seizes the lever N and draws it toward him, thus drawing the catch O from the notches in the plate L. He then draws the lever M toward him, thus raising the colters and the spades sufficiently above the ground to render them inoperative. If the lever N is now released the catch O will engage the plate L again, and thus keep the colters and spades above the ground. The upper end of the lever E′ should also be pushed toward the wheel A, thereby releasing the pinion D′ from its engagement with the wheel F′. The parts may be left in this position until the field to be cultivated is reached. The colters and spades may then be lowered by drawing the catch O from its engagement with the plate L. The wheel D′ should also now be set to engage the wheel F′. The colters will roll freely over uneven ground, the frame I being freely suspended in the manner described. Their weight, however, will be sufficient to cause them to cut stalks and sod, or other obstructions usually found in the field. The engagement of the wheels D′ and F′ with each other cause a rapid revolution of the spades, which strike the ground, one after another, in rapid succession. Each succeeding spade should strike the ground a little in advance of the one last striking it; this distance, however, may be varied according to the character of the work to be done.

The spades also yield to uneven ground. In this manner the soil may be thoroughly spaded, and with great rapidity.

The implement is light, cheap, and durable, and simple in its construction and operation.

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

In combination, the tilting frame I, the colters K K, carried by said frame, the frame S, the revolving and spirally-arranged spades *a' a'*, carried by the frame S, the driving-gearing, and the adjusting mechanism, all operating together substantially as described, in the same implement.

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Witnesses:
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