(No Model.)

G. CARROTHERS.

CULTIVATOR TOOTH.

No. 317,971. Patented May 19, 1885.

Fig. 1.

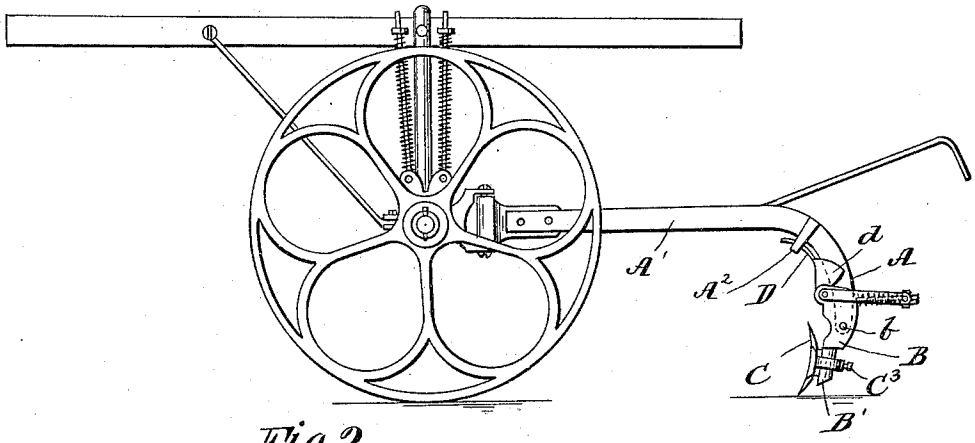


Fig. 2.

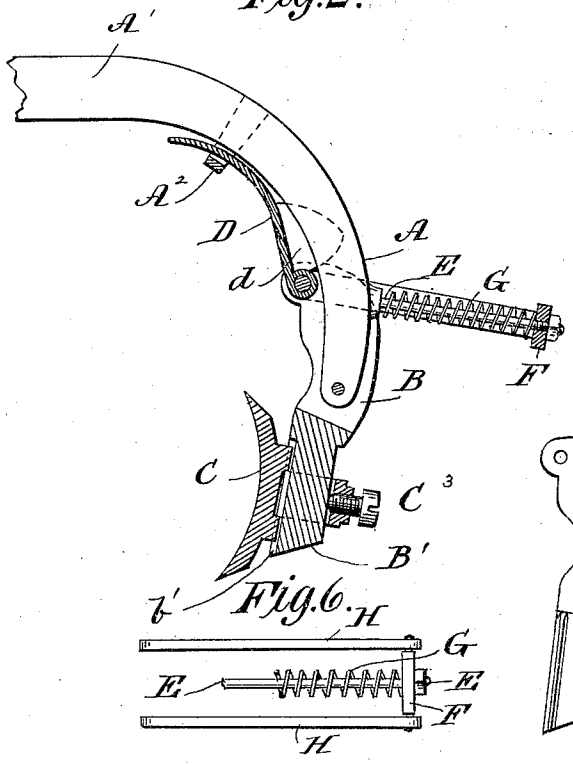


Fig. 3.

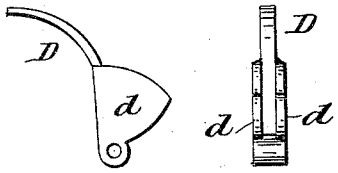


Fig. 4.

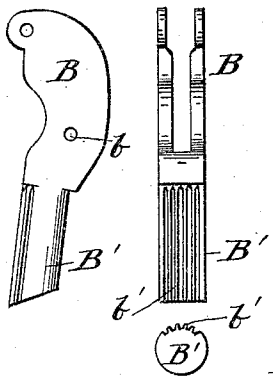


Fig. 5.

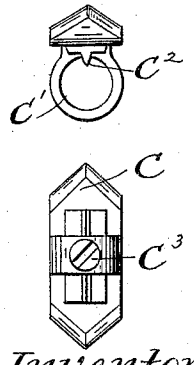


Fig. 6.

Witnesses.
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UNITED STATES PATENT OFFICE.

GEORGE CARROTHERS, OF PIEDMONT, OHIO.

CULTIVATOR-TOOTH.

SPECIFICATION forming part of Letters Patent No. 317,971, dated May 19, 1885.

Application filed March 10, 1885. (No model.)

To all whom it may concern:

Be it known that I, GEORGE CARROTHERS, a citizen of the United States, residing at Piedmont, in the county of Harrison and State of Ohio, have invented certain new and useful Improvements in Cultivator-Teeth; and I do 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, reference being had to the accompanying drawings, and to letters and figures of reference marked thereon, which form a part of this specification.

This invention has relation to spring-tooth cultivators. It consists in the combination, with a pivoted shoe, of a guard secured at one end to the upper end of the shoe and extending and bearing at its upper end along the front side of a standard.

The invention further consists in the combination of the standard provided with a loop or keeper, of the shoe pivoted to such standard, and a guard-plate pivoted at one end to the upper end of the shoe and having its other end projected through and movable within the keeper on the standard.

It consists, further, in other improvements, which will be hereinafter more fully described and claimed.

In the drawings, Figure 1 is a side view of a cultivator provided with my improvements. Fig. 2 represents the spring-tooth attachments in vertical section in position on the standard. Fig. 3 is a detail view of the guard-plate. Fig. 4 is a detail view of the shoe. Fig. 5 is a detail view of the shovel, and Fig. 6 is a detail view of the links and spring, all of which will be described.

The construction shown in Fig. 1 in the region of the spindle and the devices for supporting the drag-bar have been included in a separate application for patent of even date herewith, and for such reason detailed description of same will not be made herein.

The standard A is usually bent from the rear end of the drag-bar A′ to the lower end of the standard.

I pivot at *b* the shoe B. This shoe may have the shovel integrally formed on it, but it is preferably adapted to receive such shovel, and the latter is secured in the manner I will now describe.

On the lower end of the shoe I form a tenon, B′, in the front side of which I form vertical serrations *b′*, fitted to receive a tongue on the rear side of the tooth. This tooth C has fixed to its rear side a ring, C′, fitted to embrace the tenon B′, and is provided within said ring with a tongue, C^2, which is adapted to engage any one of serrations *b′* in the tenon.

A set-screw, C^3, turns through the rear side of the ring C′, and bears against the tenon B′, so that the tongue C^2 is held in engagement with any one desired of the serrations B′, and the tooth secured firmly in position. By loosening the screw and adjusting its tooth from side to side the same may be set to any angle desired and held at such angle by tightening the screw, as will be understood.

On the standard A, I secure a loop or keeper, A^2, to receive the upper end of the guard-plate D. This guard-plate is pivotally secured at its lower end to the upper end of the shoe, and as the said shoe is forced back by engagement with the stone or other obstruction, the guard-plate moves outward at its lower end with the upper end of said shoe, and prevents dirt, grasses, or other obstructions from getting behind the upper end of the shoe, and impeding the free return of said shoe to its operative position when the obstruction has been passed.

It is manifest that instead of pivoting the guard-plate to the shoe and holding the other end thereof in the keeper A^2, the said guard-plate might be formed of spring-metal having its lower end rigidly secured to the upper end of the shoe, and its upper end formed with a tension rearwardly, so as to hold it in engagement with the front side of the standard; but I prefer the construction as shown and before described. I also prefer to provide the said guard-plate near its pivot with gears or wings *d*, which project rearwardly on opposite sides of the standard and prevent ingress laterally of anything to clog the part. These wings also serve to strengthen and guide the guard-plate in its motions.

From the rear side of the standard, about in rear of the upper end of the shoe, I project a rod, E. On this rod I secure a follower-block, F, which is movable along the rod and held normally at the outer end of such rod by means of a spring, G, which bears between the follower-block and the standard.

Links H H are pivoted at their outer ends to the opposite sides of the follower-block and have their other ends extended alongside of and pivoted to the upper end of the shoe. When the lower end or shovel of the shoe engages a stone, root, or other unusual obstruction, the spring will permit it to ride over such obstruction, and when passed will cause it to resume its operative position.

By the arrangement of rod E, follower F, and links H, I arrange the spring mechanism in rear of standard, render practical the use of a coil-spring in such location, and avoid the use of levers and similar complicating mechanism.

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

1. The combination of a standard, a shoe pivoted to said standard, and a guard secured at its lower end to the shoe and bearing at its upper end against the standard above the shoe, substantially as set forth.

2. The combination of a standard, a shoe pivoted to said standard, a keeper on said standard above said shoe, and a guard pivotally secured at its lower end to the shoe and having its upper end held movable within the keeper, substantially as set forth.

3. The combination of a standard, a shoe pivoted to said standard, and a guard secured at its lower end to the shoe and bearing at its upper end against the standard, said guard being provided with jaws projected rearwardly on opposite sides of the standard, substantially as set forth.

4. The combination of the standard, a rod or bar fixed to and projected rearwardly from said standard, a follower-block placed on said rod or bar, a shoe pivoted to the standard, links secured at one end to the pivoted shoe and having their other ends carried in rear of the standard and connected with the follower-block, and a spring placed on the rod or bar and bearing between the standard and the follower-block, substantially as set forth.

5. The combination, in a cultivator, of the standard provided on its front side with a loop or keeper and with a rod or bar projected rearwardly, as described, the shoe pivoted to the standard, the guard connected with the upper end of the shoe, the follower-block placed on the rod or bar, a spring on said rod or bar between the follower-block and the standard, and links connecting the upper end of the shoe and the follower-block, substantially as set forth.

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

GEORGE CARROTHERS.

Witnesses:
R. E. SEARS,
GEO. H. COLLINS.