

UNITED STATES PATENT OFFICE

JEFFERSON M. GARDNER, OF SILVER SPRINGS, TENNESSEE, ASSIGNOR TO HIMSELF AND ANDREW McCLAIN.

IMPROVEMENT IN CULTIVATOR AND COTTON-CHOPPER.

Specification forming part of Letters Patent No. 186,571, dated January 23, 1877; application filed June 10, 1876.

To all whom it may concern:

Be it known that I, JEFFERSON M. GARDNER, of Silver Springs, in the county of Wilson and State of Tennessee, have invented a new and valuable Improvement in Cultivator and Cotton-Choppers; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a vertical section of my cultivator and cotton-chopper, and Fig. 2 is a plan view of the same.

The nature of my invention consists in the construction and arrangement of a cultivator and cotton-chopper, as will be hereinafter more fully set forth.

In the annexed drawings, A represents the frame, on the under side of which, on each side, are secured two angular frames, B B, forming boxes for the axle C. D D are the driving-wheels attached to the ends of the axle. To each set of frames B are fastened suitable clevis or draft bars, for the attachment of the plow-beams E, each of which is back of the frame, provided with a standard or post, G, and these posts are connected by double swivel-joints, substantially as described in Letters Patent No. 153,893, granted to me August 11, 1874.

C is a shaft, provided with ratchets at its ends, by means of which it is connected with the outer axles C¹ C¹. The shaft C carries a spur-wheel, H, which engages with a pinion, a, mounted in a frame, I, hung upon the axle. The journals of this pinion extend through the sides of the frame I, and upon them is hung the chopper and scraper frame J, the front thereof being suspended by a limber-coupling, K, to allow the scraper and chopper frame to rise and fall according to the irregularities of the ground. The front plate of the frame J is notched on both sides, and the front end of bars L L are hung by pivots in either of said notches, whereby the scrapers and choppers may be raised or lowered to suit sharp or flat

ridges. These bars are also pivoted to the rear plate of the frame J, and to each end of said bars is attached a block, M. N N are the scrapers, and are raised and lowered on the bars by set-screws b b. On the ends of the journals of the pinions a are eccentrically-set pins e e, which operate pivoted levers O O, the outer ends of which are, by coiled springs d d, connected with a rock-shaft, f, having the chopper R upon the rear end.

P P are dogs for retaining the chopper until the strength of the spring is obtained, or, in other words, until the lever O draws the full strain on the spring D. When at that point the lever trips the dog, and lets the hoe R come with all the force of the spring; when to its full extent it is caught and retained by the opposite dog, and so on, alternately from side to side.

By the use of the blocks M the scrapers are held a proper distance in the ground, said blocks being adjustable to fit any kind of ridge, by means of wedges or set-screws.

S is the tongue, pivoted on the rear cross-bar of the frame A, and passing through a loop, T, on the front cross-bar thereof. Through the tongue is passed a short shaft, having a T-shaped lever, A', on its lower end. The center arm of this lever is held stationary to the front cross-bar of the frame, and the side arms are, by rods m m, connected to foot-levers B' B'. On the upper end of the lever-shaft is an arm, C', and a ratchet-wheel, n. From the forward end of the lever, on arm C', extends an arm, D', back to and connecting with the connections of the plow-beam. By these means the frame A may be turned to the right or left without turning the beam.

When it is desired to go to the right, press on the right foot-lever B', which will pitch the front of the frame to the right, and the top of the standards G to the left, and the plows will run to the right. By means of pawls p, engaging with the ratched wheel n, the tongue and frame are held in any relative position desired.

Short driving-axles C¹ C¹ are journaled in axle-boxes C² C², which are secured to each

one of angular bars B B. These axles carry on their inner ends radially-projecting pins *c*, adapted to engage with ratchets on the inner face of sliding clutches C³ C³. These clutches or sleeves are provided with internal longitudinal partitions, (not seen in the drawings,) which fit into slots *c*² *c*² in the divided ends of central axle C, that carries the cotton chopping and scraping devices.

Between frame I and sleeves or clutches C³ C³ are interposed helical springs *c*³ *c*³, which operate to hold the said clutches in engagement with pins *c* *c* on axles C¹ C¹. To disengage and remove the scraping and cutting devices, slide the sleeves C³ C³ back on axle C, against the pressure of springs *c*³ *c*³. Axle C, frame I, and the parts attached may then be lifted out of place, and separated from the front part of the frame by removing the fastening screws or pins. The machine is then in condition for use as a cultivator.

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

1. The combination of the levers A', arm D, ratchet-wheel *n*, pawl *p*, arm C⁴, and tongue S, as and for the purpose set forth.

2. The combination of short driving-axles C¹ C¹, provided with radial pins *c* *c*, with central axle C, which carries the cotton chopping and scraping devices, and is provided with sliding spring-clutches C³ C³, substantially as described.

3. The combination of the frame I, spur-wheel H, pinion *a*, frame J, the adjustably-hinged bars L, carrying the adjustable blocks M, and adjustable scrapers N, and coupling K, substantially as set forth.

4. The combination of the lever O, springs *d*, chopper R, and dog P, operating, as described, by means of the eccentric pins *e* *e*, as and for the purpose set forth.

5. The chopper operated by spring-pressure, and provided with dogs for retaining the chopper until the springs have been drawn to their full tension, as herein set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

JEFFERSON M. GARDNER.

Witnesses:

W. A. McCLAIN,
J. E. FREEMAN.