

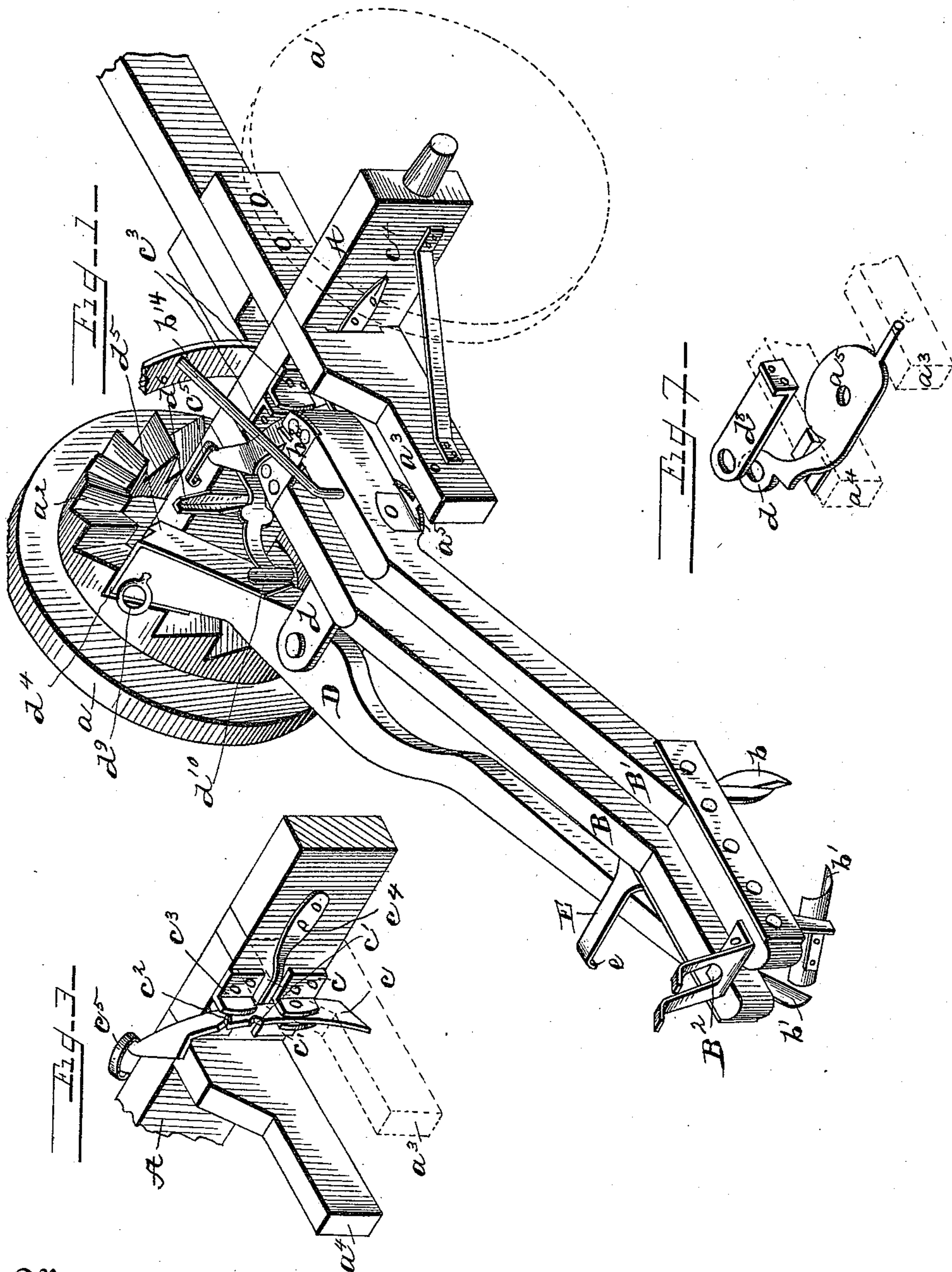
(No Model.)

2 Sheets—Sheet 1.

L. STUDER.  
COTTON CULTIVATOR AND THINNER.

No. 450,303.

Patented Apr. 14, 1891.



Witnesses

G. W. Taubenschmitt,  
Edwin S. Clarkson

Inventor

Lucas Studer

By his Attorney

Francis P. Pava

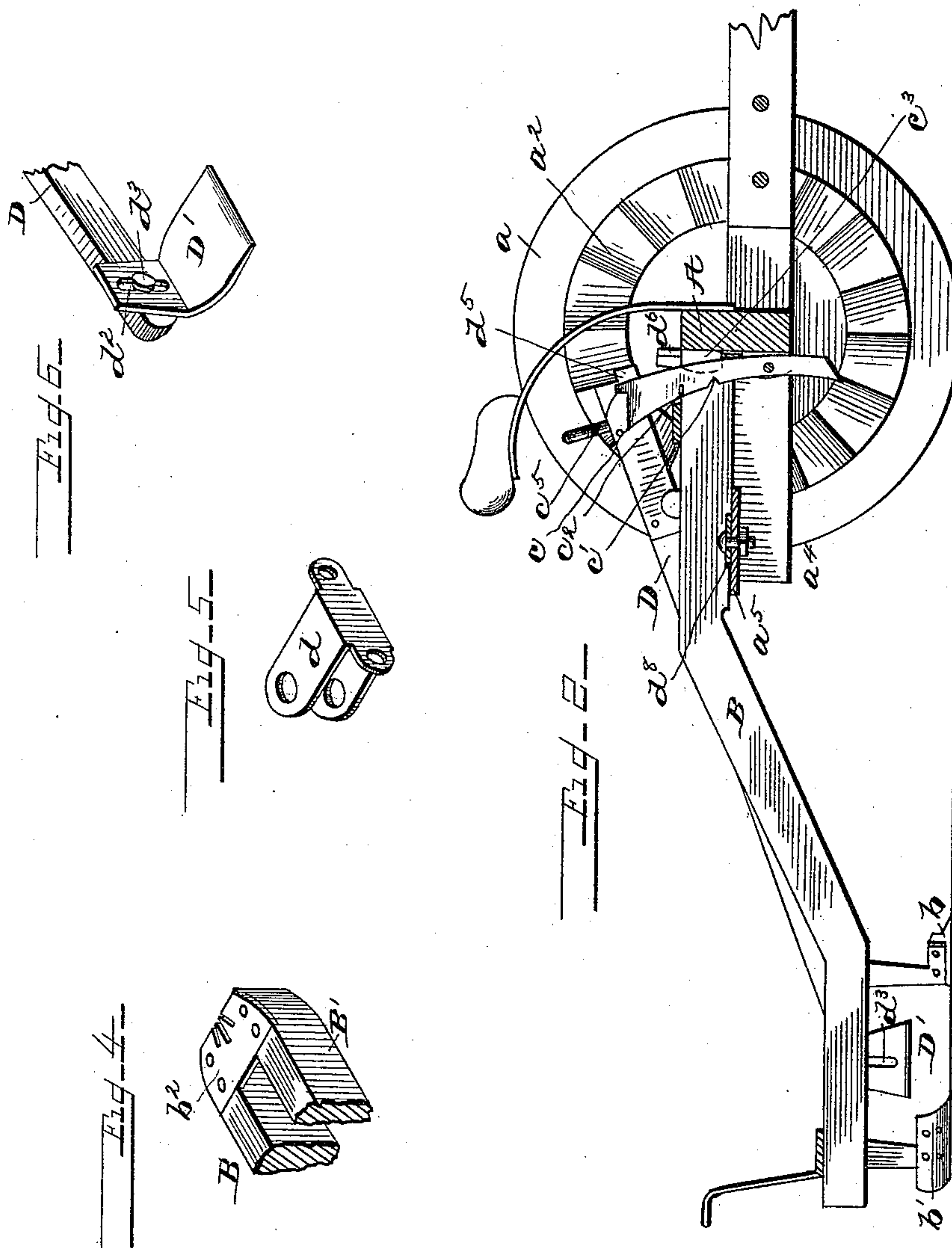
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# UNITED STATES PATENT OFFICE.

LUCAS STUDER, OF ST. JOSEPH'S HILL, INDIANA.

## COTTON CULTIVATOR AND THINNER.

SPECIFICATION forming part of Letters Patent No. 450,303, dated April 14, 1891.

Application filed August 2, 1890. Serial No. 360,762. (No model.)

*To all whom it may concern:*

Be it known that I, LUCAS STUDER, a citizen of the United States, residing at St. Joseph's Hill, in the county of Clark and State of Indiana, have invented certain new and useful Improvements in Cotton Cultivators and Thinners; 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 the letters of reference marked thereon, which form a part of this specification.

My invention relates to a combined cotton chopper and cultivator, the object of the same being to provide a machine that will cultivate the plants, clean the weeds from between the rows of plants, throw fresh dirt up around the same, and thin them out, bringing the plants to a "stand." This machine may be used to cultivate and thin out any plants planted in drills or rows and requiring to be brought to a stand.

With these ends in view my invention consists in the parts and combination of parts, as will be fully described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view of my machine. Fig. 2 is a longitudinal vertical central section through the same. Fig. 3 is a detail perspective view showing the spring-catch lever located on the axle. Fig. 4 is a perspective view of the notched head of the cultivator-beams. Fig. 5 is a perspective view of the clip to which the thinner or chopping arm is pivoted. Fig. 6 is a similar view of the chopping-blade provided with a slot. Fig. 7 is a perspective view of a slight modification of means for pivoting the chopper-arm to the cultivator-beams.

A represents the axle of the machine, and  $a$  the wheels on which the machine runs. The wheel  $a$  is provided with a ring having cams on its outer surface.  $a^3$  and  $a^4$  are hangers suitably secured to axle A, on which are pivoted the cultivator-beams B and B' by means of the plate  $a^5$ . The lower ends of these beams are secured together by means of a plate B<sup>2</sup>. Secured to the beams B and B', respectively, are shovels  $b'$   $b'$  and cutters  $b$   $b$ . The upper ends of said beams are secured together by

means of a slotted or notched plate  $b^2$ , which engages with a lever  $c$ , which is pivoted in plates C C and works between guides secured to the axle. This lever  $c$  is provided with a notch  $c'$  and a lug or projection  $c^2$ , said lug serving to limit, when desired, the upward movement of the beams B and B'.

$c^4$  is a suitable spring secured to the axle and presses against the curved lever or arm  $c$ .  $c^5$  is a suitable handle secured to lever or arm  $c$ .

D is the chopper-arm, which is pivoted to the cultivator-beams by means of the plate  $d$ . Secured to the lower end of the arm D by means of screw or bolt  $d^3$  is an adjustable chopping-blade D', having an elongated slot  $d^2$ . The upper end of the arm D is angular and bounded or faced with metal or other suitable material  $d^4$ . Said plate  $d^4$  is provided with a lug or projection  $d^5$ , which engages a right-angle plate  $d^6$ , secured to the axle.

$d^{10}$  is a flat or other spring, which is secured to hanger  $a^4$  and engages the chopper-arm D.

$d^9$  is a ring secured in the said arm.

E is a guide secured to the beam B, having a depending end  $e$ , said guide serving to limit the upward and outward motion of the chopper-arm.

$b^{14}$  is a handle or lever secured to the beam B'.

The operation is as follows: The machine being in operative position, as shown in Fig. 1, it is placed at the beginning of a row and started forward, the angular end of the chopping-arm engaging the cam-ring  $a^2$ . The knives  $b$  cut the row out from the sides of the plants, and the chopper-blade D' cuts the weeds, &c., from between the plants designed for the hill or stand. The shovels  $b'$ , following, throw the soil up around the plants. It will be seen that the row will be chopped to a stand and dirted on both sides at a single passage of the machine along said row. Where it is desired to throw the beams B and B' out of a direct line with the wheels  $a$  and  $a'$ , the lever  $c$  is drawn forward by means of the handle  $c^5$ , the driver then throws the beams to either side by means of lever  $b^{14}$ , and the lever  $c$  is then let go and it engages one of the side notches in the notched plate  $b^2$ . The chopper-arm, when it is desired, is thrown out of engagement with the cams on wheel  $a$  by placing the pro-



jection  $d^5$  in engagement with  $d^6$ . In moving the machine from one place to another it is always desirable to raise the shovels and blades from contact with the ground. To effect this raising I simply pull the lever  $c$  forward until it is out of engagement with the notched plate  $b^2$  and force the beams down by means of lever  $b^{14}$  until the notched plate  $b^2$  comes into engagement with the notch  $c'$  in lever  $c$ . This holds the beams out of contact with the ground.

The manner of using the modification shown in Fig. 7 it is deemed unnecessary to describe, as it is obvious to any one skilled in the art.

It is evident that many slight changes and alterations may be made in the relative construction and arrangement of parts without departing from the spirit of my invention, and hence I would have it understood that I do not confine myself strictly to the parts herein described.

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

1. A cotton-cultivator consisting of the beams pivoted on suitable hangers secured to the axle, cutting-blades and shovels secured, respectively, to the beams, and a notched plate connecting the upper ends of the beams, in combination with a notched lever secured to the axle and lever  $b^{14}$ , all constructed and operating substantially as described.

2. In combination with a cultivator, substantially as herein shown, a ring composed of a series of cams secured to the inside of

one of the wheels of the cultivator, a chopper-arm  $D$ , pivoted to said cultivator and engaging said cam-ring, the adjustable chopping-blade, and the spring  $d^{10}$  and catch  $d^6$ , all combined and operating substantially as described.

3. The combination, with a cultivator having beams  $B$  and  $B'$ , of a notched plate  $b^2$ , securing said beams together, and a curved lever  $c$ , pivoted, as described, and provided with notches and a lug, spring  $c^4$ , and guideways  $c^3$ , all substantially as described.

4. A combined cotton chopper and cultivator, consisting of the beams  $B$  and  $B'$ , pivotally secured by means of plate  $a^5$  on hangers and provided with cutting-blades  $b$  and shovels  $b'$  and a notched plate  $b^2$ , a curved lever or arm  $c$ , provided with notches and a projection, said lever or arm working in guideways  $c^3$  and engaging the notched plate  $b^2$ , spring  $c^4$ , chopper-arm pivoted to the beam  $B$  and provided with an adjustable chopping-blade  $D'$  at one end, and an angular portion at the other end and a lug  $d^5$ , a catch  $d^6$ , and a cam-ring which is engaged by and operates the chopper-arm, spring  $d^{10}$ , and guide  $E$ , all constructed and operating substantially as described.

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

LUCAS STUDER.

Witnesses:

JOS. DICKMANN,  
PETER P. RENN.