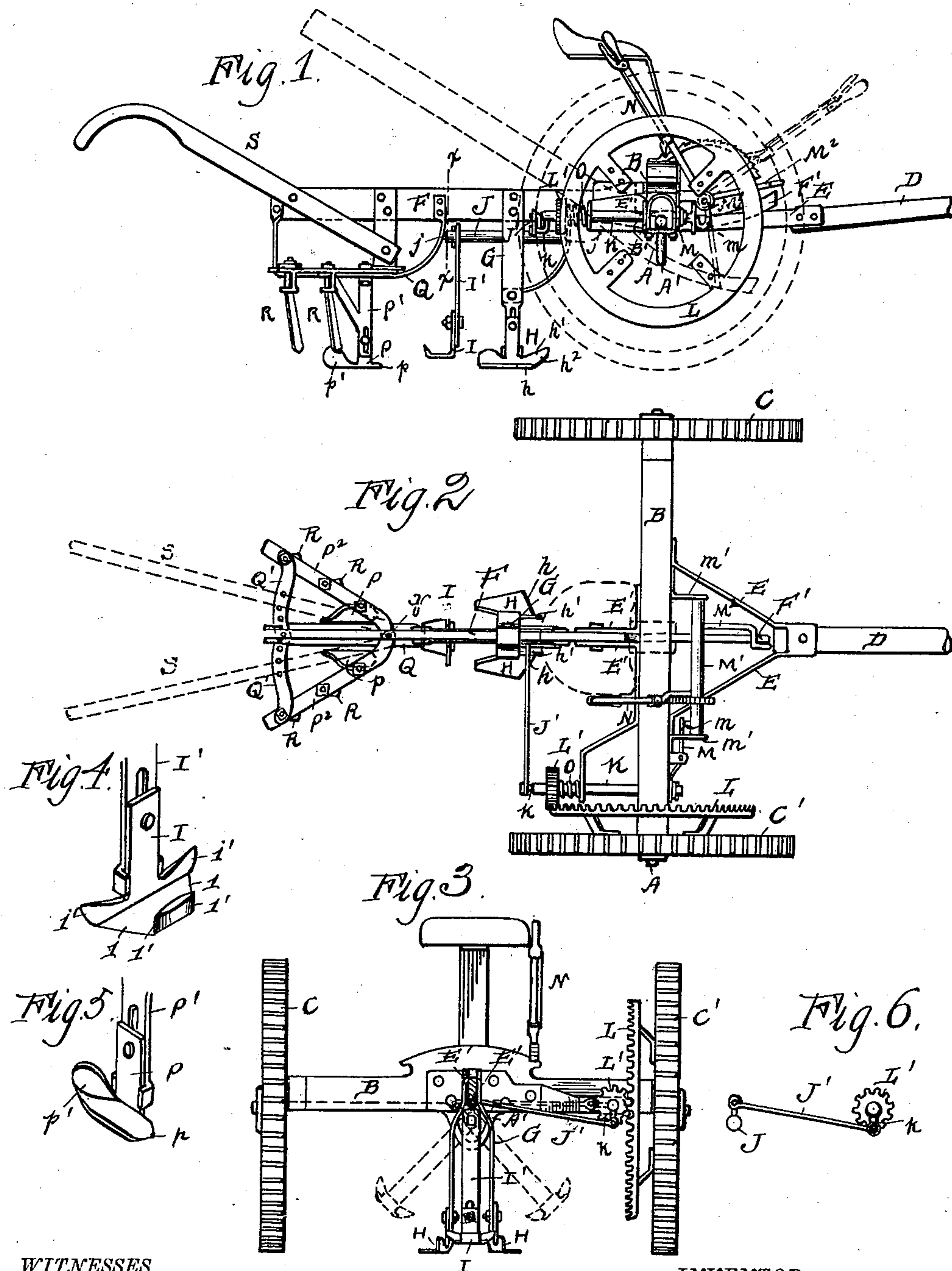


(No Model.)

L. STUDER.
COTTON CHOPPER.

No. 549,032.

Patented Oct. 29, 1895.



WITNESSES

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UNITED STATES PATENT OFFICE.

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COTTON-CHOPPER.

SPECIFICATION forming part of Letters Patent No. 549,032, dated October 29, 1895.

Application filed May 2, 1895. Serial No. 547,882. (No model.)

To all whom it may concern.

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

Figure 1 is a side elevation of a machine embodying the invention with the wheels indicated by dotted lines, and the raised position of beam and corresponding positions of actuating parts also indicated by dotted lines. Fig. 2 is a plan view with seat and handles in dotted lines. Fig. 3 is a section on line X X, Fig. 1. Fig. 4 is a perspective view of the swinging cutter. Fig. 5 is a similar view of one of the shares P. Fig. 6 is a detached view showing how the rock-shaft J is actuated.

The object of this invention is to provide an efficient cultivator more especially adapted for use in cultivating young cotton, although capable of use with other crops which are grown in drills or rows; and the invention consists in the novel construction and combination of parts, all as hereinafter described, and pointed out in the appended claims.

Referring to the accompanying drawings, the letter A designates the axle, which preferably consists of an iron rod or bar, to which is secured a wooden beam or bolster B for the attachment of the different parts.

C C' are the traction-wheels, which are loosely journaled on the axle.

D is the pole, which is connected to the beam B by the hounds E.

F is the cultivator-beam, which is pivotally attached to lugs or brackets E', secured to the rear face of the beam B.

G is a forked leg or standard which is rigidly secured to the beam F a short distance back of the pivotal point thereof. Each branch of this leg or standard has secured to its lower end portion a shoe or share H. These shoes or shares consist each of a horizontal blade approximately triangular in

form, with a sharp oblique forward cutting-edge h , and having at the inner edge a vertical flange h' , which is projected forwardly of the blade and has a sharp erect cutting-edge h^2 . The two cutters are so placed that they diverge from each other toward the rear.

I is a swinging cutter which is behind the shoes or shares H, being carried by an arm I', which is attached at its upper end to a rock-shaft J, which is journaled in bearings j underneath the beam F. The shaft J is connected by a link-rod J' with a crank-pin k of a horizontal rotary shaft K, which is journaled on the beam B and in an arm of one of the lugs or brackets E', said shaft being capable of a limited endwise movement.

Attached to the inner face of the traction-wheel C' is an annular gear L, which in the present instance is shown as provided with crown-teeth which engage the teeth of a pinion L' on the shaft K. The gear L and pinion L' may, however, be provided with bevel-teeth, if preferred. It will be understood that by means of this gear the cutter I will be oscillated or swung from right to left as the cultivator is drawn along.

M is an arm, which is pivoted in front of the axle and which has at one end an engagement with the forward end portion of the shaft K, while its opposite arm is arranged to be engaged by an arm m of a rock-shaft M', which is journaled in bearings m' in front of the axle and to which is connected a lever N, which is in operative relation to the driver's seat. When said lever is thrown forward, the arm m of the rock-shaft M' is brought in contact with the arm M, and the latter is rocked, causing the shaft K to be moved endwise in a forward direction, throwing the pinion L' out of engagement with the gear L. Upon the reverse movement of the lever N the arm m is moved out of contact with the arm M, and the pinion is thrown back into gear by the action of a spring O, which is coiled around the shaft K between the pinion L' and the arm in which the said shaft has a bearing. The rock-shaft M' also has an arm M², which upon the forward throw of the lever N takes a bearing upon a forward extension F' of the cultivator-beam F, depressing said extension and raising the cultivator away from the ground. This action is performed

simultaneously with the throwing of the pinion L' out of gear. To permit this extension F the necessary play, the axle is formed with a downward loop A' and the beam B is cut away, as at B'.

The cutter I consists of a flat blade having an oblique cutting-edge i at each side and at its front and rear edges a vertical flange, whose ends are formed with cutting-edges i' . Behind the cutter I are two shares or plows P P, having the sharp-pointed forward edges p and the vertical flanges or wings p' at their outer edges at the rear portions, said flanges or wings converging rearwardly. These shares or plows are carried by the standards P', which are secured to the rearwardly-diverging bars P², whose forward ends are pivotally attached to a bar Q at q and whose rear portions are connected by adjustable link Q'.

R R are follower-shares, one or more of which is carried by each of the bars P² to the rear of the shares P P. Said shares P P, the cutter I, and the front shares H are made vertically adjustable with relation to the standards which carry them in order that they may be set to work at any desired depth.

S S are guiding-handles which may be employed.

The cultivator is designed for use when the plants are small and is to straddle the row. The forward shoes H cut the soil at each side of the row, the erect cutting-edges h^2 making a clean cut and preventing the young plants being torn up or dislodged. The diverging flanges h' throw the soil away from the plants. At the same time the oscillating cutter I makes a cut between the plants and cuts the soil and weeds in the row. It also cuts up superfluous plants and thins the row to the proper degree. The shares P P now follow and throw fresh soil around the standing plants, while the follower-shares cut up the soil between the rows. In this manner, by going once over each row the field is thoroughly cultivated and hoed.

The pole should be used with a neck-yoke, in order that the cultivator may be properly raised and held up by the operation of the lever N.

When it is desirable to cultivate to a greater depth, a person can follow behind and bear upon the handles S S.

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

1. In a machine for the purpose described, the combination with the pivoted beam F, the advance straddle row shares carried thereby and adapted to move soil away from the plants, and the rear shares P also carried by said beam and adapted to move soil toward the plants, of a rock shaft journaled below said beam between the advance and the rear shares,

the cutter arm attached to said shaft and carrying a cutter at its lower end, a gear connection between said shaft and one of the drive wheels, of the machine whereby as the machine advances the said shaft is alternately rocked, means for throwing said gear into and out of operation, and lever operated devices for elevating and depressing the said beam, substantially as specified.

2. In a cultivator, the pivoted cultivator beam F, the straddle row shares H carried thereby, said shares consisting each of a flat blade having the front cutting edges h , and the vertical flange h' having the erect cutting edges h^2 , the laterally oscillating cutter I behind said shares H, the straddle row shares P, P, behind said swinging cutter, said shares having rearwardly converging flanges or wings, means for actuating said swinging cutter, and means for operating said beam to raise the cutters from the ground, substantially as specified.

3. In a cultivator, the shares H consisting each of a flat blade having front horizontal cutting edges h , and the vertical front flange h' , having erect cutting edges, h^2 , substantially as specified.

4. In a cultivator, the combination of the laterally swinging cutter I, the rock-shaft carrying said cutter, the endwise-movable shaft geared to one of the traction wheels, and having a driving connection with the said rock-shaft, the pivoted arm M one end portion of which engages said endwise movable shaft, and a lever-operated rock-shaft having an arm adapted to contact with the opposite end portion of the arm M and a spring arranged to move said endwise-movable shaft in the opposite direction, substantially as specified.

5. The herein described straddle row cultivator, having the cultivator beam F pivoted to the rear of its axle, the two vertically adjustable shares H carried by said beam, the laterally swinging, vertically adjustable cutter I carried by a rock-shaft journaled in bearings of said beam, the two vertically-adjustable shares P, the laterally-adjustable bars which carry the shares P and the follower shares, and lever-controlled means for actuating said swinging cutter and for elevating said beam, substantially as specified.

6. In a cultivator, the swinging cutter I, consisting of a flat blade, having an oblique cutting edge i at each side, and at its front and rear edges a vertical flange whose ends are formed with cutting edges i' , substantially as specified.

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

LUCAS STUDER.

Witnesses:

WILLIAM F. TULEY,
J. B. JAMES.