(No Model.)

J. J. BALLARD.

COTTON CHOPPER.

No. 372,008. Patented Oct. 25, 1887.

Fig. 1.

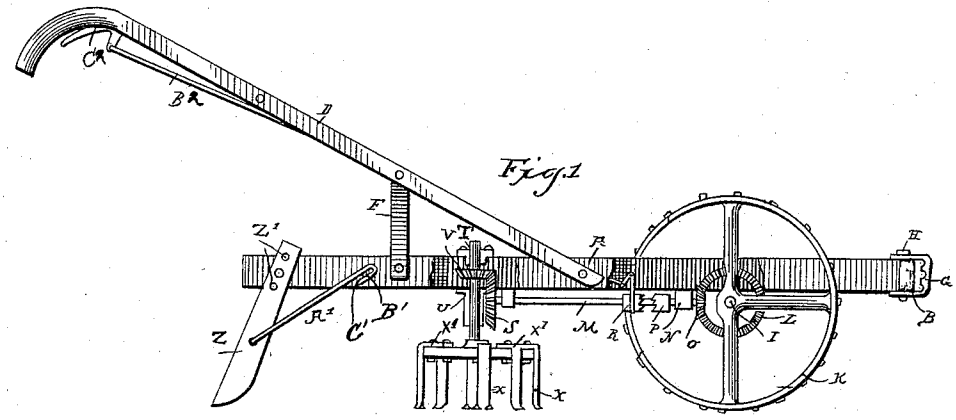


Fig. 2.

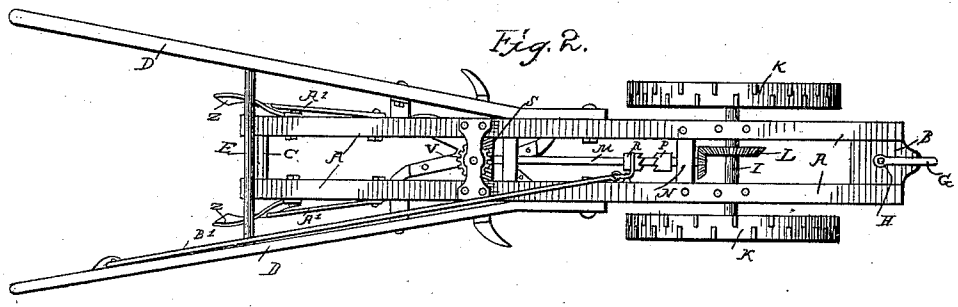


Fig. 3.

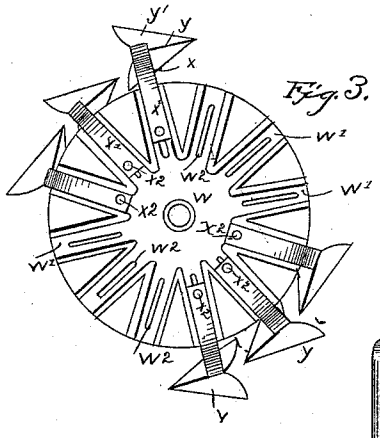
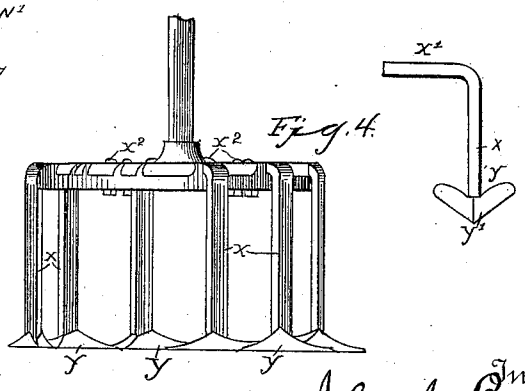


Fig. 4.



Witnesses
Henry G. Dieterich
J. W. Garner

Inventor
John J. Ballard

By his Attorneys,
C. A. Snow & Co.

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

JOHN J. BALLARD, OF TERRELL, TEXAS.

COTTON-CHOPPER.

SPECIFICATION forming part of Letters Patent No. 372,008, dated October 25, 1887.

Application filed March 10, 1887. Serial No. 230,443. (No model.)

To all whom it may concern:

Be it known that I, JOHN J. BALLARD, a citizen of the United States, residing at Terrell, in the county of Kaufman and State of Texas, have invented a new and useful Improvement in Cotton-Choppers, of which the following is a specification.

My invention relates to an improvement in cotton-choppers; and it consists in the peculiar construction and combination of devices, that will be more fully set forth hereinafter, and particularly pointed out in the claims.

In the drawings, Figure 1 is a side elevation of the cotton-chopper embodying my improvements, parts of the frame being broken away to disclose interior constructions. Fig. 2 is a top plan view of the same. Figs 3 and 4 are detailed views.

The frame is composed of a pair of parallel side bars, A, connected together at their front ends by a block, B, and at the rear ends by a transverse bar, C.

D represents the handles, which are similar to plow-handles, and have their lower ends bolted to the outer sides of the side bars. The said handles are connected together by means of a rung, E, and are connected to the side bars by means of vertical standards F.

G represents a clevis, which is attached to the block B by means of a pivotal bolt, H.

I represents a transverse driving-shaft, which is journaled in suitable bearing-blocks secured on the under sides of the side bars, A, at a suitable distance from the front end of the frame. The ends of this shaft project beyond the outer sides of the side bars, and to the said projecting ends of the shaft is rigidly attached a pair of driving and supporting wheels, K.

L represents a miter gear-wheel, which is rigidly secured to the shaft I at a suitable distance to one side of the center thereof.

M represents a longitudinal shaft, which is journaled in blocks N, that connect the bars A on the under sides thereof. The front end of the shaft is provided with a rigid miter-pinion, O, that meshes with the gear-wheel L. The shaft M is made in two sections connected together by a collar, P, which is rigid to the front section and forms a bearing for the front end of the rear section. On the latter is feathered a sliding collar, R, forming a clutch, which is adapted to engage the collar P when moved forward, and thereby lock the two sections of the shaft M rigidly together, for the purpose to be hereinafter described. To the rear end of the shaft M is rigidly attached a a miter gear-wheel, S.

T represents a short vertical shaft, which is journaled in bearing-boxes U, that connect the bars A, and are arranged on the upper and lower sides of the said bars. Near the upper end of this shaft is a miter-pinion, V, which engages the gear-wheel S, and to the lower end of the said shaft is attached a circular plate, W. This plate is provided with a series of radial grooves, W′, and in the center of each groove is a radial longitudinal slot, W^2. The grooves W′ are formed on the upper side of the plate T, and the slots communicate with the said grooves and extend entirely through the said plate.

X represents a series of supporting-feet, each of which has its upper end bent at right angles to form an arm, X′, adapted to fit in one of the grooves of the plate. A clamping-bolt, X^2, is provided for each of the said arms, the said clamping-bolts being adapted to extend through the slots W^2, and thereby secure the arms to the plate. By reason of the slots W^2, the arms may be moved outwardly from the center of the plate to any desired distance. To the lower end of each supporting-foot is secured a hoe or chopper, Y, the said hoes or choppers having two straight cutting-edges arranged at a suitable angle, and being flat on their lower sides and angular on their upper sides, as shown, thereby forming inclines Y′, which extend from the center of the hoes to the cutting-edges thereof.

Z represents a pair of vertical cutters, which are bolted to the outer sides of the side bars, A, and are provided at their upper ends with a series of openings, Z′, whereby they may be vertically adjusted on the bolts and thus caused to run at any desired depth in the ground. The opposing inner sides of the cutters are curved, as shown at Fig. 2, and the lower edges of the cutters are rounded, as shown at Fig. 1. Draft-rods A′ are attached at their rear ends to the cutters, and have their front ends connected to the side bars by means of bolts B′, which extend through slots C′, formed in the

front ends of the draft-rods. By means of these slots the inclination of the cutters Z may be regulated, as will be readily understood.

C^2 represents a hand-lever, which is fulcrumed to the underside of one of the handles and is connected to the sliding clutch-collar R by means of a rod, B^2. The function of this lever and rod is to move the clutch-collar R forward or back, so as to cause the gears S and V, which rotate the plate W, to be connected to or disconnected from the gears which connect the shaft M with the shaft I.

The operation of my invention is as follows: A horse is attached to the machine, and the operator takes hold of the handles and directs the horse so that the machine is drawn, with its driving-wheels and cutters Z, on opposite sides of a row of cotton-plants. A suitable number of feet carrying chopping-hoes are attached to the plate W, as before described; the clutch-collar R is caused to engage the collar P, and the rotation of the shaft I is communicated to the plate W, thereby causing the chopping-hoes to whirl in a horizontal direction. As the machine moves forward, the chopping-hoes serve to chop out some of the plants, and thus leave only a sufficient number of them standing to make a crop. If the plants are very thick, the plate W will be provided with chopping-hoes to its full capacity; but if the plants are not so thick the number of chopping-hoes U will be reduced. The function of the cutters Z is to work the earth on opposite sides of the row of plants, and thereby cultivate the plants at the same time that they are chopped or thinned.

Having thus described my invention, I claim—

1. The combination, with the frame and the operating-gearing, of the vertical shaft T, supported by the frame and acted on by the operating-gearing, the horizontal plate W, rigidly secured to the lower end of the shaft and provided with radial grooves, and slots in said grooves, the feet having their upper ends bent at right angles, fitted in said grooves and adjustably secured therein by bolts passing through the radial slots, the lower ends of the feet carrying choppers, substantially as set forth.

2. The combination, with the frame provided with the handles D, of the transverse shaft I, the longitudinal sectional shaft M, geared thereto, the vertical shaft T, geared to the shaft M, the plate W, secured to the lower end of the shaft T and carrying the choppers, and the lever C^2, pivoted on the handle and connected by a rod, B^2, to a clutch, R, on the shaft M, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

JOHN J. BALLARD.

Witnesses:
JOE. P. MOORE,
A. D. LLOYD.