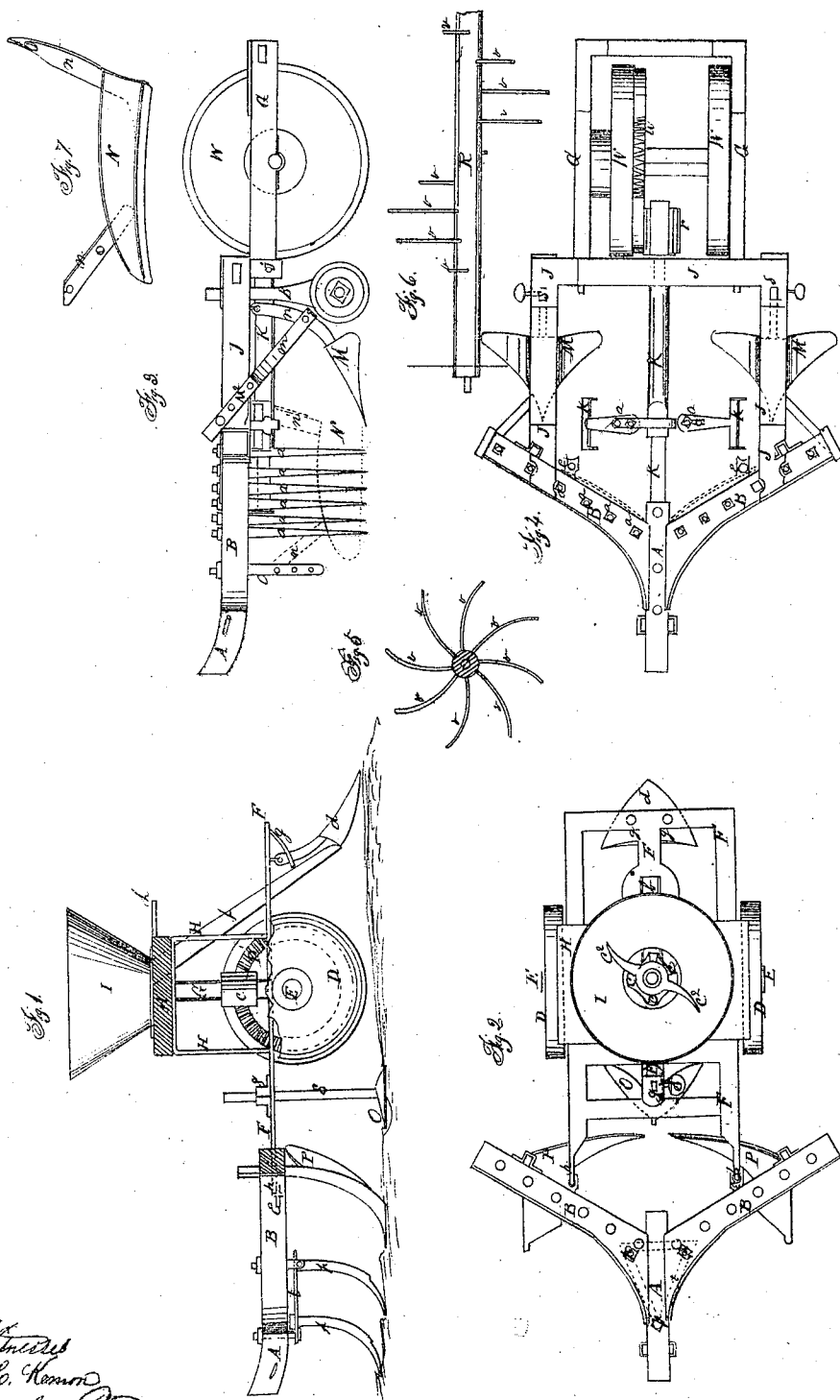


J. Vaughn.

Planter & Cultivator.

N^o 72703

Patented Dec. 24, 1867.



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JOHN VAUGHN, OF COLLEGE GROVE, TENNESSEE.

Letters Patent No. 72,703, dated December 24, 1867.

IMPROVEMENT IN COMBINED PLANTER AND CULTIVATOR.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, JOHN VAUGHN, of College Grove, in the county of Williamson, and State of Tennessee, have invented a new and improved Combined Planter and Cultivator; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, and in which—

Figure 1 is a side elevation of my invention.

Figure 2 is a top view of the same.

Figure 3 is a side elevation when the combination has been changed.

Figure 4 is a top view of such changed combination.

Figure 5 is a cross-section of the revolving rake, detached.

Figure 6 is a top view of the same; and

Figure 7 is a side elevation of the scraper, detached.

Similar letters of reference indicate corresponding parts in the several figures.

This invention consists in a new combination of the planter, cultivator, revolving hoe, plough, scraper, and revolving rake, by means of which every operation required in raising cotton can be performed with one instrument, and fifty per cent. of the time and labor required by the old methods can be saved.

In the drawings, A represents the draw-beam, to the rear portion of which are affixed two projecting wings, B B, one on each side, extending outward and backward, as shown clearly in figs. 2 and 4. These wings are used for supporting the ploughs, cultivator-teeth, and scrapers, and for attaching the planter, hiller, and the revolving rake, when these parts are used. The draw-beam and wings are used in every combination, all the other parts being removable for the various purposes to which the instrument will be applied. These purposes may be described as five in number.

In the first place the cotton-seed is to be planted. To accomplish this the three small ploughs, *p p p*, attached to a triangular frame, *t*, shown in fig. 1, and in red lines in fig. 2, are to be used, and in connection with them, two large ploughs, *P P*, are to be fixed to the ends of the wings, and adjusted to throw the dirt inward and form the ridges. The planter-frame *F* is also to be attached. This frame is a rectangular horizontal frame, provided with hooks *h h*, at its forward extremity, which hook into eyes *e e*, on the rear side of the wings B B, and a central longitudinal bar, *F'*, which supports the opening and covering-ploughs, and serves as a bearing for the lower end of the agitator-shaft *C*. *O* represents the opening-plough, being made in the form shown in figs. 1 and 2, and attached to the central bar *F'* by a standard, *S*, held by a socket and set-screw, *s*, so as to be adjustable at different heights, as circumstances may require. The frame *F* rests upon an axle, *E*, supported by two draught-wheels *D D*. Between the wheels *D D*, the axle carries a large gear-wheel, *D'*, which gears with a pinion, *c*, on the agitator-shaft *C*, and operates the agitating-device. Four upright posts, *H H*, standing upon the horizontal frame *F*, support a platform, *H'*, upon which rests the seed-box *I*. The upper end of the shaft *C* passes through the platform *H'*, which at that point answers the purpose of a bottom to the seed-box, and carries a conical grooved or fluted nut, *c'*, and above the nut two curved horizontal arms, *c'' c''*. The nut and arms revolve with the shaft, and agitate the contents of the seed-box, insuring the falling of the seed into the conductor *b*, through which it drops into the furrow opened by the plough *O*. *d* is the covering-plough, hung loosely from the central bar *F'*, behind the conductor *b*, which it closely follows, and being of the form clearly shown in the drawings. Guides *g g* are provided, which keep the covering-plough in place, allowing it to rise and fall with the irregularities of the ground, but not to move laterally.

The seed-box is an inverted cone, or frustum of a cone, resting on the platform *H'*, and provided with a cut-off slide *h*, by which the opening in the top of the conductor may be closed or regulated at pleasure. The frame *t*, and all the ploughs, are to be attached to the draw-beam and wings in such a manner that they can be adjusted at different heights. The instrument, as thus combined, is clearly shown in figs. 1 and 2, in which form it is ready to make the ridge, open the seed-furrow along the centre of the ridge, sow the seed, and cover it, while passing over the ground a single time. It may be then laid aside till the cotton has begun to grow and requires cultivating. When the time has come for this, the second stage of the process, a new combination of

the parts is to be made. This is effected by removing the frame F, and attaching in its place the frame J, shown in figs. 3 and 4; in removing the wing-ploughs P P and the frame t, with its three small ploughs, *p p p*; in inserting in each wing six straight vertical blades or harrow-teeth *a a*; in adjusting the central revolving rake R; and in affixing the draught-wheels W W, and their frame G, for rotating the rake.

In figs. 3 and 4, a revolving hoe, K, is shown in place of the rake R. The hoe, however, is not to be used till a subsequent stage of the process. At present the rake R, figs. 5 and 6, is used, bearing, at the same points, the rear end of the draw-beam A, and the centre of the rear cross-beam J', of frame J, and rotated by a circle of cogs, *w*, on the inner side of one of the wheels W, gearing into a pinion, *r*, which is formed on a sleeve fitted to adjust either upon the rear end of the shaft of the hoe K or that of the rake R. Rollers *r' r'*, attached to standards *s' s'*, which can be adjusted at any height in the rear corners of the frame J, serve to support the rear end of that frame. The front end is attached to the rear side or top of the wings B B, by any suitable means. The front end of the frame G is attached to the cross-beam J' by lugs *j j* and a bolt. The drawings, figs. 3 and 4, represent clearly this combination, except that the hillers, M M, shown in the drawings, are not included in it, and the hoe, K, occupies the place of the rake, as above explained.

The instrument as thus combined is to be used in the first cultivation of the cotton. It is only necessary to pass it over the ridge once or twice, at pleasure. In doing this it will thoroughly harrow both sides of the ridge, break the crust, and destroy the small grass just at the time of its coming up.

For the third stage of the process, the instrument is prepared by removing the rake R, rear frame G, and wheels W, and inserting the hillers M M and scrapers N N. The hillers are two in number, and of the form shown in figs. 3 and 4. They are suspended from the side beams of the frame J by curved standards *m m*, pivoted at their upper extremity, just in front of the roller-standards *s'*, and are provided with adjusting-braces *m' m'*, by which they can be held at any angle or elevation from the ground, the braces being adjusted by means of a series of pins and holes, *m²*. The scrapers are two in number, of the form shown in fig. 7, and are attached as represented in dotted lines in fig. 3. They each consist of a single curved plate, N, having two arms or standards, *n n'*, by which they are fixed to the draw-beam and the forward part of the frame J. An arm, *o*, projects down from the draw-beam, to which the arm *n* is to be fastened, being provided with a series of holes, by which the front and inner end of the scrapers may be adjusted at any required height. The rear standard *n'* is fastened to the frame J, by any suitable means, at *o'*. The situation and relative position of the scrapers thus attached are shown by the dotted lines N in fig. 4.

The instrument being thus adjusted, is caused to pass over the rows of cotton for their second cultivation. In passing along the rows once it will harrow, scrape, and hill each side of the row at the same time.

When the instrument is next used, the scrapers N N are to be removed, the revolving hoe K, inserted as shown in fig. 4, and the frame G and wheels W W affixed in order to work the hoe. With this combination it will harrow, chop in bunches, and hill the cotton in once passing over the field. In the subsequent cultivating of the plant, I detach all the parts except the wings, and insert in them four ploughs, P P, two on each side of the draw-beam. As thus arranged the instrument will finish a row on both sides in once passing over it. In this way a single instrument can be made to do the work of several separate and independent devices; and to do it, not more economically only, but in a superior manner.

With the combined planter and cultivator above described, it has been found in actual practice that one hand, with two horses, can do the work hitherto requiring from four to six horses and hands, saving at no time less than two horses and three hands, and at times as many as six of each. The instrument does the whole work, from beginning to end, except a trifling amount of hoeing which may be sometimes required. The shape of the rake and hoe used in the combination is clearly shown in the drawings. The latter is the common revolving hoe, made with adjustable arms *u u*, and sharp blades *k k*. The former is a single shaft, provided with a spiral row of bent teeth *v v*, arranged along the shaft in the manner shown in figs. 5 and 6.

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

1. The triangular frame t, bearing the small ploughs *p p*, when used in connection with a cotton-cultivator, substantially in the manner and for the purposes set forth.
2. The combination of the draw-beam A, wings B B, ploughs *p p p*, opening-plough S, frame F, wheels D D' shaft C, seed-box I, conductor *h*, and covering-plough *d*, substantially as shown and described.
3. The covering-plough *d*, when hung loosely between two guides *g g*, so as to have a free vertical, but no lateral motion, substantially as described.
4. The frame F, when constructed with hooks *h h*, which operate, in connection with eyes *e e*, to hold the frame to the wings B B, when used in connection with a cotton-planter and cultivator, substantially in the manner and for the purposes specified.

his
JOHN X VAUGHN.
mark.

Witnesses:

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