

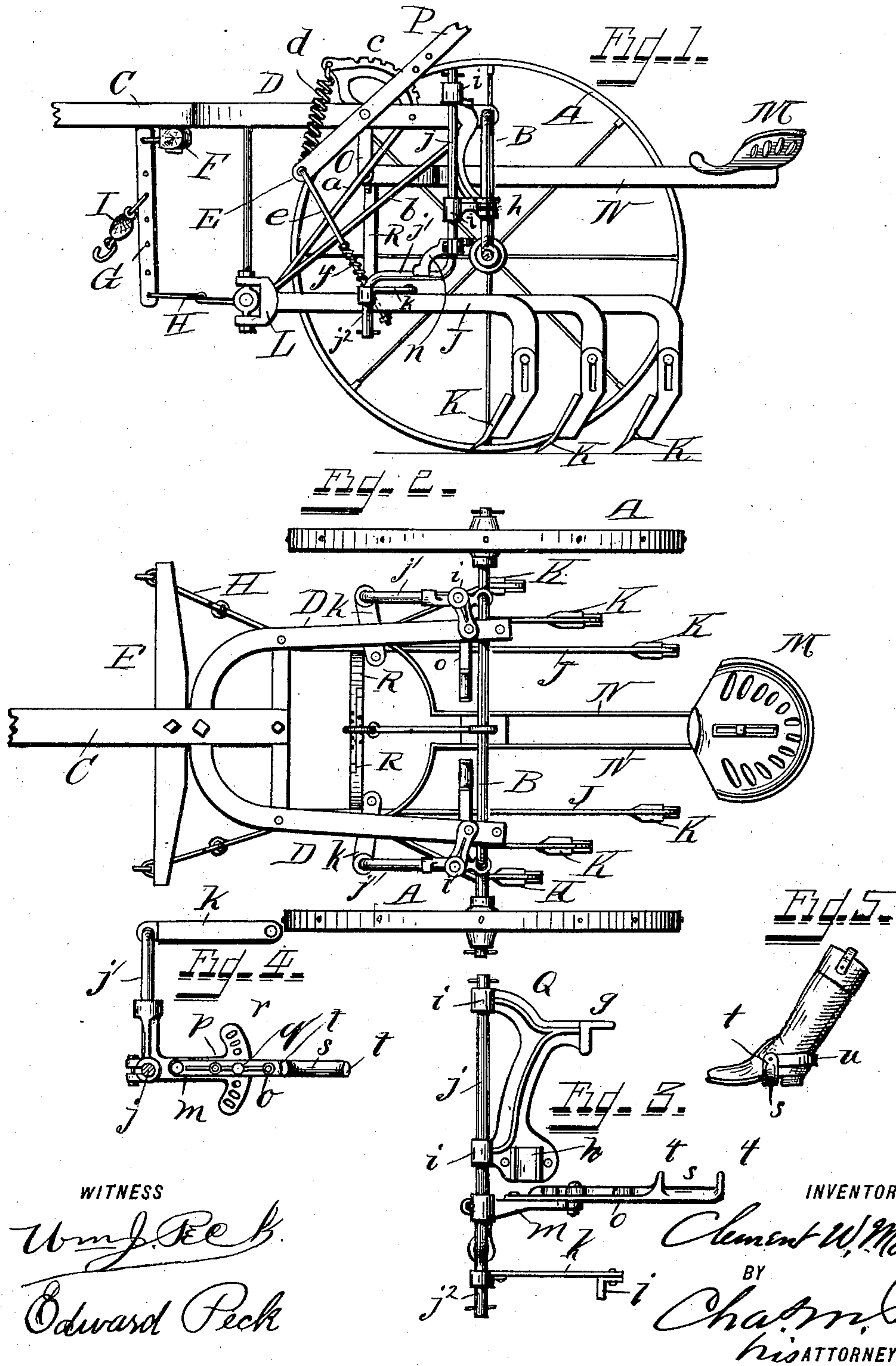
No. 685,999.

Patented Nov. 5, 1901.

C. W. MICHAEL.  
CULTIVATOR.

(Application filed July 30, 1900.)

(No Model.)





# UNITED STATES PATENT OFFICE.

CLEMENT W. MICHAEL, OF DAYTON, OHIO, ASSIGNOR TO THE STODDARD MANUFACTURING COMPANY, OF DAYTON, OHIO, A CORPORATION OF OHIO.

## CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 685,999, dated November 5, 1901.

Application filed July 30, 1900. Serial No. 25,281. (No model.)

*To all whom it may concern:*

Be it known that I, CLEMENT W. MICHAEL, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Cultivators, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to straddle-row cultivators; and it has for its object the provision of means whereby the driver from his seat on the machine can swing either or both of the cultivator-gangs to follow irregularities in the row, and thus be enabled to cultivate close up to the growing crop no matter how irregularly planted out of a straight line.

It also has for its object the provision of simplified means for accomplishing the above results.

The novelty of my invention will be hereinafter set forth, and specifically pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation of a cultivator embodying my invention with the rear wheel removed. Fig. 2 is a plan view of the cultivator. Fig. 3 is an enlarged detail rear elevation of the gang-shifting mechanism. Fig. 4 is a plan view of the same with the bracket-support removed. Fig. 5 is a detail showing an attachment for drawing the shifting stirrup backward.

The same letters of reference are used to indicate identical parts in all the figures.

A A represent the supporting or carrying wheels, journaled on stubs of a straddle-row axle B.

C is the pole or tongue, from which extend rearwardly the properly-braced hounds D, whose rear ends are secured to the top of the arch of the axle B in the usual or any suitable manner. From the forward part of the hounds depend two arms E, whose lower ends are braced by rearwardly and upwardly extending rods a, whose upper ends are secured to the hounds at the rear thereof, as seen in Fig. 1.

F is the doubletree, and G perforated links

connecting its outer ends with the forward ends of the links H, extending to the lower ends of the arms E. The singletrees I are adjustably secured to the links G to obtain proper draft, as seen in Fig. 1.

J represents the usual three-part or multiple drag-bars, carrying the hoes or shovels K at their lower ends and connected at their forward ends by swivel-joints L to the lower ends of the arms E.

M is the driver's seat, supported on metal bars N, whose forward divergent ends are secured to hanger-arms O, pendent from the hounds D, and to the arch of the axle.

P represents the usual hand lock-levers, pivoted to the hounds and engaging the segment-racks c, from which coiled springs d extend to the lower ends of the levers. Links e connect the lower ends of the levers P with the gang-bars J, and coiled springs f upon said links are employed for exerting downward pressure upon the gangs in the usual manner.

The cultivator thus far described is of a well-known type, and I will now proceed to describe my improvements, which are to be added thereto or to any other form of straddle-row cultivator where adaptable.

Secured to the rear end of each of the hounds by an angular bracket g is a bracket-arm Q, whose lower end is secured, as at h, to the vertical arm of the axle-arch. This bracket-arm has two journal-bearings i, in which are journaled the vertical part of the shaft j, whose lower end is first bent forward, as at j', and then downward, as at j<sup>2</sup>. The downturned end j<sup>2</sup> passes through a perforation in a link-piece k, that is connected by a clip-piece with the main gang-beam J. Fast upon the rod j is an inwardly-extending arm m, preferably provided with a curved extension n, embracing the rod j' and having at its inner end an adjustable stirrup-piece o, the adjustment of said stirrup-piece being both in and out on the arm m by means of the bolts p and at angles thereto to advance the stirrup forward or back by means of a bolt q, extending through perforations in a segment portion r of the arm m, as clearly shown in Fig. 4.

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The stirrup part of the arm *o* I have lettered *s*, and it has upturned extension *t* to hold the foot from slipping and for another purpose to be presently explained.

5 Connecting the main gang-beams about half-way of their forward ends and the arch-axle B are two upwardly-extending and inwardly-curved arch-pieces R, overlapping each other at their upper ends and adjust-  
10 ably bolted together where they overlap, the purpose of which is to unite the two gangs and adjust them as far apart from each other or as near together as may be desired in such manner that when motion is imparted to one  
15 gang by the driver in his seat pressing upon one of the stirrups with his foot to swing one of the connected gangs toward the center of the machine through the medium of the shaft *j* and connecting-link *k* a corresponding but  
20 outward movement is imparted to the opposite gang through the medium of the spreader-arm R to carry it away from the center of the machine, as will be readily understood. In this way the driver by pressing on either stir-  
25 rup can cause the gangs to be simultaneously vibrated to follow the sinuosities or irregularities of the row of plants and cultivate close up to the same.

If desired, under certain conditions of use  
30 of the cultivator the spreader R may be disconnected so as to leave both gangs independent in their lateral movement, and in such case the driver can have his feet locked to the stirrups *s* by a strap *u* extending around  
35 the heel and connected at its forward ends to the upturned ends *t*, so that he can not only push upon said stirrups, but can draw them back, and thus swing each gang independently in or out.

40 It is to be observed that the shaft *j* passes freely through the bearings *i*, so as to have vertical play therein, and that its lower vertical extension *j*<sup>2</sup> likewise has free vertical play through the perforation in the link *k* to  
45 enable the gangs to be adjusted up and down

for the requisite depth of cultivation or to be raised entirely from the ground in hauling the machine from place to place. It is to be further observed that the movement in swinging the gangs outward or inward is al- 50 ways in horizontal planes, not affecting the depth of cultivation by the movement of shifting the gangs outward or inward, which is an important feature.

Having thus fully described my invention, 55 I claim—

1. In a sulky straddle-row cultivator, the combination with each gang and the main frame, of an arm *j* having extensions *j'* *j*<sup>2</sup> jour-  
60 naled to the main frame, a link *k* connecting the extension *j*<sup>2</sup> with the gang, and a stirrup-piece rigidly secured to the arm *j* and within reach of the driver's foot, whereby upon press-  
ing said stirrup he can cause the lateral swing- 65 ing of the gang, substantially as described.

2. In a sulky straddle-row cultivator, the combination with each gang and the main frame, of an arm *j* having extensions *j'* *j*<sup>2</sup> jour-  
70 naled to the main frame, a link *k* connecting the extensions *j*<sup>2</sup> with the gang, and a stirrup-piece rigidly secured to the arm *j* and provided with an adjustable stirrup within reach of the driver's foot, whereby upon pressing upon said stirrup he can cause the lateral  
75 swinging of the gang, substantially as described.

3. In a sulky straddle-row cultivator, the combination with the main frame and each gang, of a bracket-arm Q, a shaft *j* journaled and having vertical play therein, a stirrup 80 *s* rigidly secured to the shaft *j*, crank extensions *j'* *j*<sup>2</sup> to the shaft *j*, a link *k* connecting the extension *j*<sup>2</sup> with the gang-beam, and a sliding connection for the extension *j*<sup>2</sup> through the perforation of the link *k*, substantially as 85 described.

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Witnesses:

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