

No. 624,063.

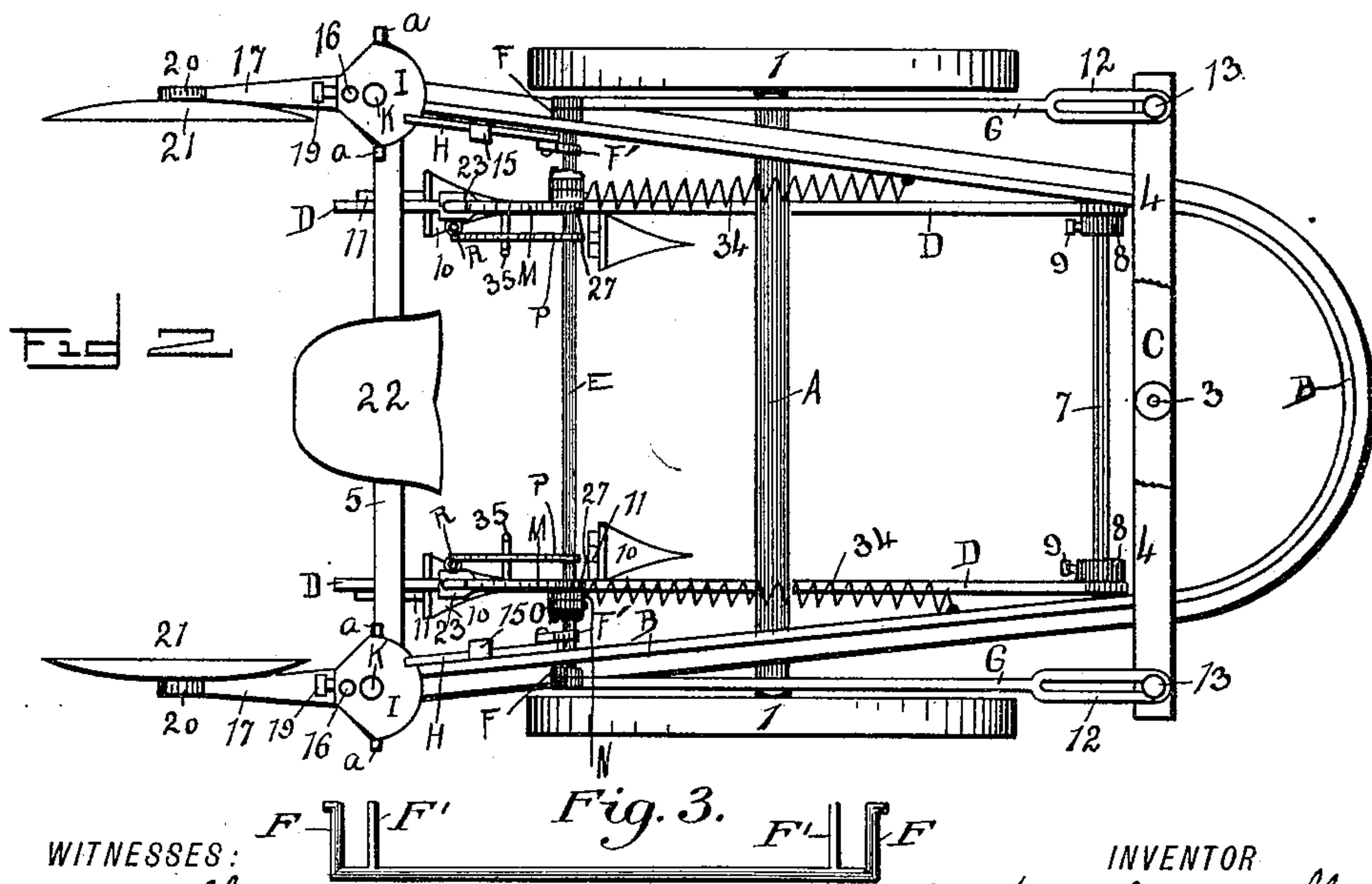
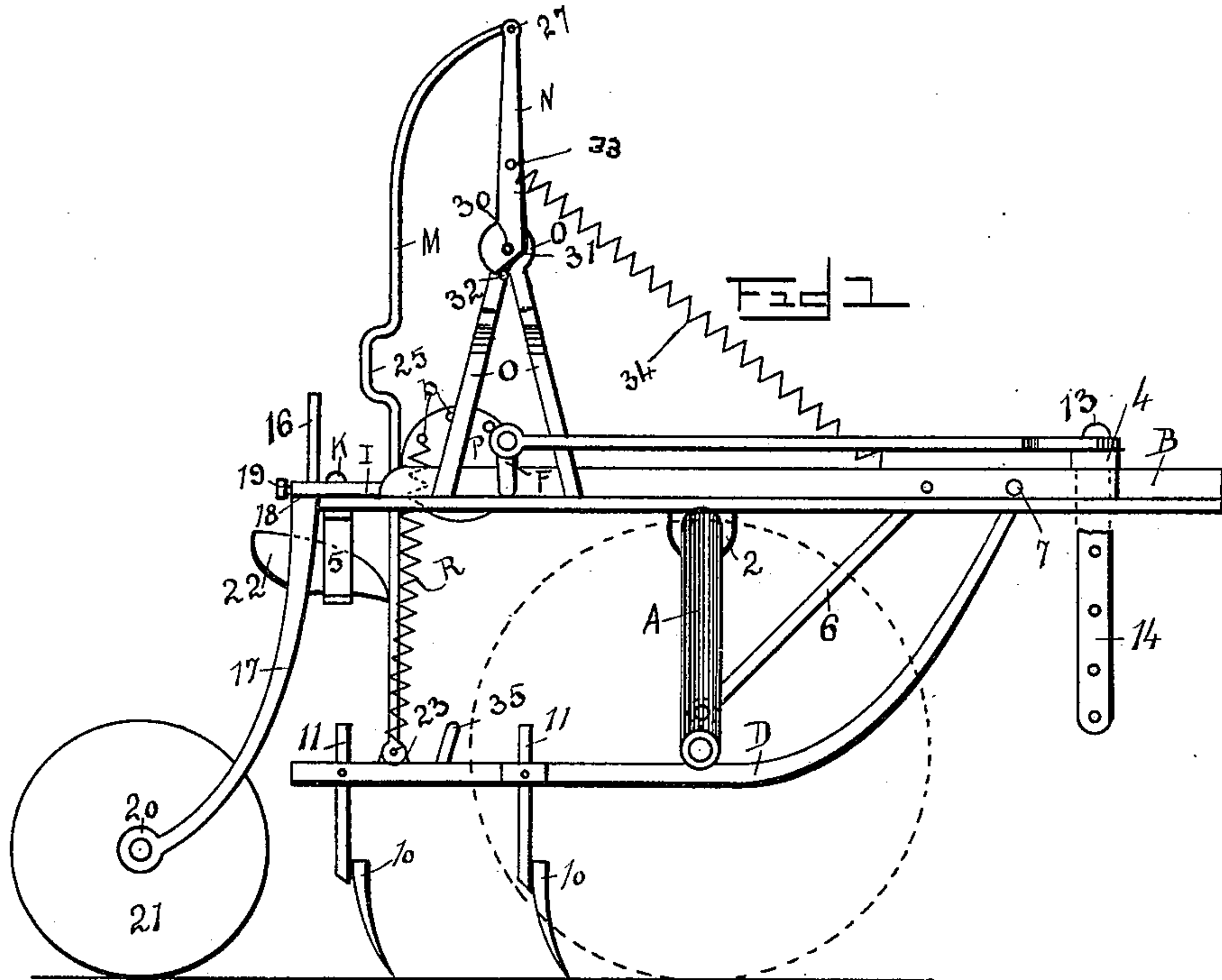
Patented May 2, 1899.

A. H. MAXWELL.

TWO WHEELED TONGUELESS RIDING CULTIVATOR.

(Application filed July 19, 1897.)

(No Model.)



WITNESSES:
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TWO-WHEELED TONGUELESS RIDING-CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 624,063, dated May 2, 1899.

Application filed July 19, 1897. Serial No. 645,074. (No model.)

To all whom it may concern:

Be it known that I, ALBERT H. MAXWELL, residing at Council Bluffs, in the county of Pottawattamie and State of Iowa, have invented certain useful Improvements in Two-Wheeled Tongueless Riding-Cultivators; and I do hereby declare that the following is 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, which form a part of this specification.

This invention relates to a novel improvement in two-wheeled tongueless riding-cultivators.

The object of my invention is to provide a tongueless cultivator provided with disks which prevent the sliding or lateral displacement of the cultivator, and so can be used upon sidehills, and which will also thoroughly cultivate and pulverize the center of the row.

My cultivator is further so arranged that the ground may be either left smooth or hilled up.

I further embody a mechanism by means of which the shovel-beams are automatically carried out of the ground and released as soon as the draft-animals are turned either to the right or left.

In the accompanying drawings I have shown, in Figure 1, a side elevation of a two-wheeled tongueless riding-cultivator embodying my invention with portions removed. Fig. 2 shows a top view of my improvement, while Fig. 3 shows a detail of the crank-shaft employed in my device.

To an ordinary crank-axle A of any suitable size or material is attached two wheels 1 1. Secured to the axle A by means of the connection 2 is an approximately U-shaped frame B, preferably formed of an L-beam, which beam in front is strengthened by means of a transverse bar C, passing from one side of the frame to the other, centrally within which bar is held an ordinary king-bolt 3, adapted to hold the doubletree 4. Centrally the frame B is strengthened and supported by means of the crank-axle A and at the rear by means of the seat-brace 5, which is secured in any suitable manner to the rear of

the frame B. Extending from the crank-axle A to the lower portion of the frame B is a brace-rod 6, (shown in Fig. 1,) which aids in securing the axle to this frame.

Adjustably secured to the shaft 7 near the forward portion of the frame B are the two shovel-beams D D, which beams are provided with an enlargement 8, provided with a set-screw 9, by means of which these shovel-beams may be placed any suitable distance apart. Secured to these beams D D are the shovels 10 10, the stems 11 of these shovel-beams being secured to the beams in the usual manner.

Intermediately positioned between the seat-brace 5 and crank-axle A is a shaft E, which shaft is provided at each end with an upwardly-extending crank F and intermediately with a second upwardly-extending crank-arm F'. To the first cranks F F are movably secured the bars G G, which bars have their forward ends 12 looped so as to engage the pins 13, which pass through these loops into the doubletree 4, there being one pin at each end, in such a manner that the pins 13 rest within the forward ends of these loops 12 12. The doubletree 4 is next provided at each end, referring now to Fig. 1, with a downwardly-extending bracket 14, to which the singletrees are attached. Secured to the frame B near the end are two collars 15 15, through which collars are made to pass the locking-bars H H, which bars at their forward ends are secured to the crank-arms F'.

Secured to the rear terminations of the frame B are two quadrants I I, which quadrants are provided with outwardly-extending ears a a, working upon the pins K. Each of these quadrants is provided in front with a seating adapted to engage the end of its adjacent bar H, as is shown in Fig. 2, while at a suitable point to the rear is a central opening, through which the bar 16 projects, which bar 16 forms the upper termination of the cutter-bar 17, which bar is provided above with a shoulder 18, which works below its connected quadrant, as is shown in Fig. 1. Each quadrant is further provided with a set-screw 19, so that the cutter-bars 17 may be lowered.

Secured to the lower end 20 of each cutter-bar 17 is an ordinary cutter-disk 21, secured

in any suitable manner, for the purpose of guiding the cutter and at the same time for cutting out the center of the row.

The bar 5 is next provided with an ordinary seat 22 to be occupied by the operator of my two-wheeled tongueless cultivator.

Extending upwardly from each of the shovel-beams D is an ear 23, from which ear extends a bar M, provided with a handhold 25. At the upper end each one of these bars, referring now to Fig. 1, is provided with an eye 27, to which eye in turn is secured the upper end of the bar N, and this bar is next secured to the upper end of the bracket O, one of which brackets in Fig. 1 is broken away, so that the inner side of the bar N may be seen. This bar N, by means of a pivot 30, is movably secured to the bracket O, the bracket being provided at the lower end with a straight surface 31, which in turn abuts against a pin 32. At a suitable point this bar N is provided with a pin 33, to which is secured a spring 34, which in turn is secured to the frame B. This bar N is provided with a tilting movement, the bar N being locked in one position whenever the pin 33 draws at a line below the center of the pin 30, but tilts this bar N in an opposite direction whenever the pin 33 is carried to the opposite side of the pin 30. Below, at a suitable point, I next provide an ordinary stirrup 35, upon which the operator may place his foot.

Positioned at a suitable point upon the shaft E are two disks P P, which disks are eccentrically secured to the shaft and are provided with a series of openings b, within which the upper end of the springs R may be secured, which springs below are secured to the ear 23.

This arrangement would embody my invention. Now the operation of my device would be as follows: The draft-animals would be secured by means of the singletrees to the doubletree 4, and as they moved forward the rear cutting-disks 21 21 would trail and cut out in the center in a straight line behind the frame B until the seating within the quadrant I registered with the bars II, when these bars II would promptly work into the seatings and so lock these quadrants and their connected cutter-bars. These cutter-bars, it should be understood, can be positioned at an angle by means of the screws 19, so that the disks will not only hold the cultivator in proper position on a sidehill, but they can be set so that they pulverize all the ground between the two rows or so set as to help hill up the corn and in so far perform a double function. It should be remembered that the pins 13 13 are so set within the doubletree that this doubletree is permitted a slight oscillatory movement without engaging the bars G G. Now should my two-wheeled tongueless riding-cultivator be used the operator would place himself within the seat 22 and in starting in the proper position would arrange the shovel-beams to come about in a straight line,

as is shown in Fig. 1, in which position the shovels 10 would be a suitable distance within the earth. As the ground is soft or hard the rear cutter-disk 21 will have to be either raised or lowered in relation to the frame B, as they more readily work into the ground. This adjustment of course is permitted by means of the set-screw 19. Now after coming to the end of the row as the horses would be turned in returning the doubletree 4 would be carried out of alinement in the horses swinging around, so that one of the bars 12 would be carried forward, the pin 13 upon the opposite side sliding backward within the loop 12. The bar G, carried forward, would in turn tilt downward the crank F, as is shown in Fig. 2, and as this crank-arm F tilted downward it would partially revolve the shaft E, so that both of the second crank-arms F' F' would be carried forward, and these arms in turn would carry forward their connected bars II, so that these bars would be carried out of their seatings within the quadrants. This would then permit a rotary movement of the cutter-bars 17, so that these cutter-bars would swing in an arc upon the frame until the cultivator was again drawn into a straight line, when these cutters will of course automatically trail in a straight line behind the frame, so that the bars II will again work into their seatings as soon as they register with the bars II. These bars II can be made to ride in either a vertical plane or horizontal plane; or, if desired, a special spring-catch may be provided. As shown, the ear 15 loosely holds the bars II, so that they ride upon the quadrant I, in which the seating is encountered, when they promptly work into the opening. At the same instant that the cutter-disks 21 are released in turning the cultivator and as the shaft E is made to revolve forward by virtue of the crank-arms F the disks P are carried upward, and so by means of the connected springs R the tension upon these springs is further materially increased, so that both the shovel-frames D D are also promptly carried upward to carry the shovels out of the ground. As these shovel-frames rise they of course carry the connected bar M upward, and this bar M soon tilts the bar N forward, so that the tension of the spring 34 is carried beyond the center, when the bar N promptly snaps forward by virtue of the spring 34, so that the shovel-frames D are held out of the earth, the straight portion 31 of the bar N engaging the pins 32 in its second position. After the cultivator is brought into proper alinement the operator is compelled to carry down the shovel-frames by means of the bars M M, which are provided with handholds, and he can, of course, also further aid this operation in depressing the stirrup 35.

It is of course understood that I need not confine myself to the exact shape of the various instrumentalities in bringing about the desired result.

In wheeling the cutter-disks are prevented from sliding around too far by means of the ears α , which would engage the upper web of the frame A, and so offers a check to any unnecessary movement of these disks 21 when they are not locked, which frame, as has been stated, is preferably made of a curved L-beam.

Now, having thus described my said invention, what I claim as new, and desire to secure by United States Letters Patent, is—

1. The combination in a two-wheeled tongueless cultivator, of a suitable supporting-frame, a shaft pivoted within said frame, two sets of crank-arms extending from said shaft, cutters trailing from said frame and adjustably secured thereto, a bar to lock said cutters in one position, said bar being secured to one of said crank-arms, a doubletree secured to said frame, and connecting-bars extending from said doubletree to the frame and crank-arms, arranged to unlock said cutter-disks whenever said doubletree is actuated in turning the cultivator, substantially in the manner set forth.

2. In a two-wheeled tongueless riding-cultivator, the combination with a suitable supporting-frame, of shovel-beams movably secured to said frame, said beams being capable of being locked in a working condition, cutter-disks trailing from and adjustably secured to said frame, mechanism to lock said cutter-disks in one position in relation to said frame, and mechanism actuated by the turn-

ing of the draft-animals to simultaneously unlock said shovel-beams to carry them upward and unlock said trailing cutters, as and for the purpose set forth.

3. In a two-wheeled tongueless cultivator, the combination with a suitable supporting-frame, of a doubletree pivoted to said frame, a shaft provided with two sets of crank-arms supported by said frame, said shaft being further provided with a set of eccentric bars connecting said doubletree to one set of said crank-arms, cutter-disks trailing from and adjustably and movably secured to said frame, bars to lock said cutter-disks in one position to said frame, said bars being secured to the remaining set of said crank-arms, shovel-beams movably and adjustably secured to said frame and being adapted to be locked in a working position and a tension connection extending from said shovel-beams to said eccentric disks, said instrumentalities being so arranged that if said doubletree is turned a suitable distance, said main shaft is actuated to unlock said cutter-disks and release and carry upward said shovel-beams, as and for the purpose set forth.

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

ALBERT H. MAXWELL.

Witnesses:

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ANE M. ELKJER.