

H. RETTIG.
CULTIVATOR.
APPLICATION FILED MAY 14, 1921.

1,404,544.

Patented Jan. 24, 1922.

3 SHEETS—SHEET 1.

Fig. 1.

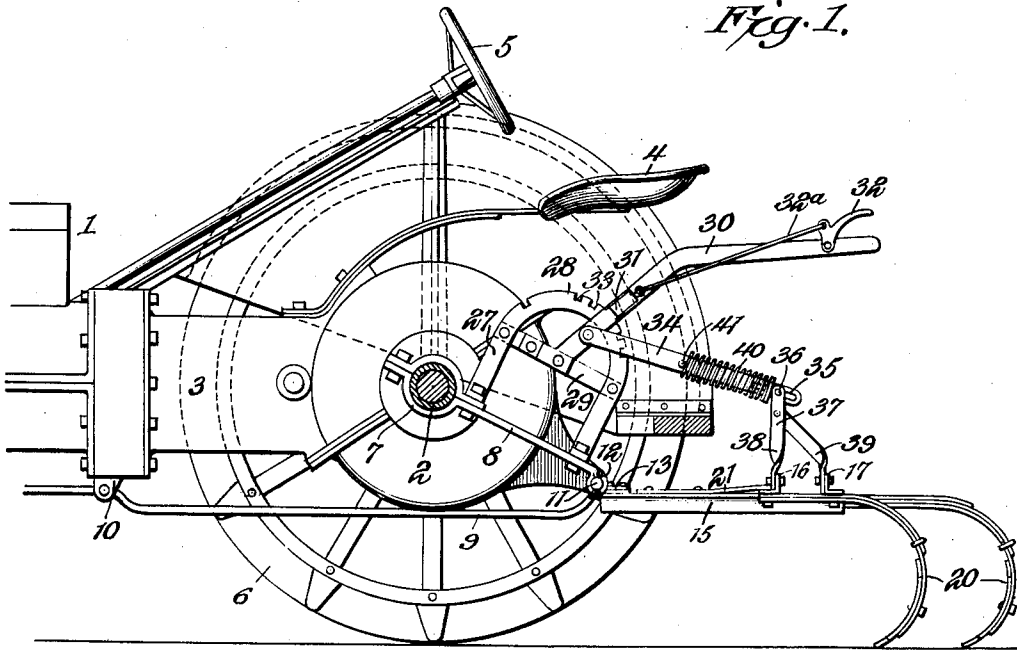
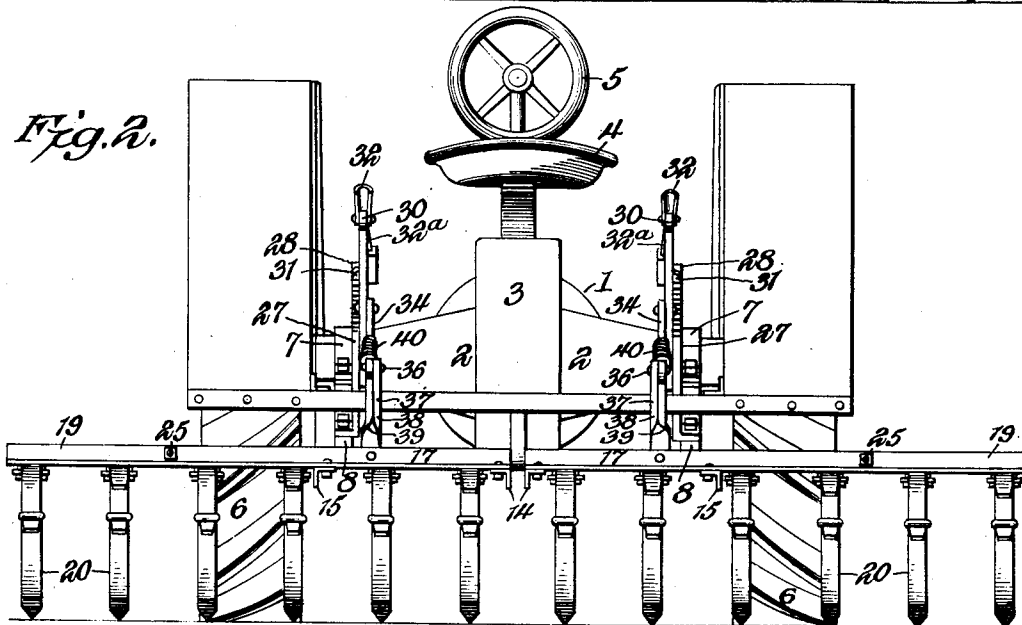


Fig. 2.



Henry Rettig, INVENTOR,

WITNESSES

Howard D. Carr.
Harry E. Seidel

BY

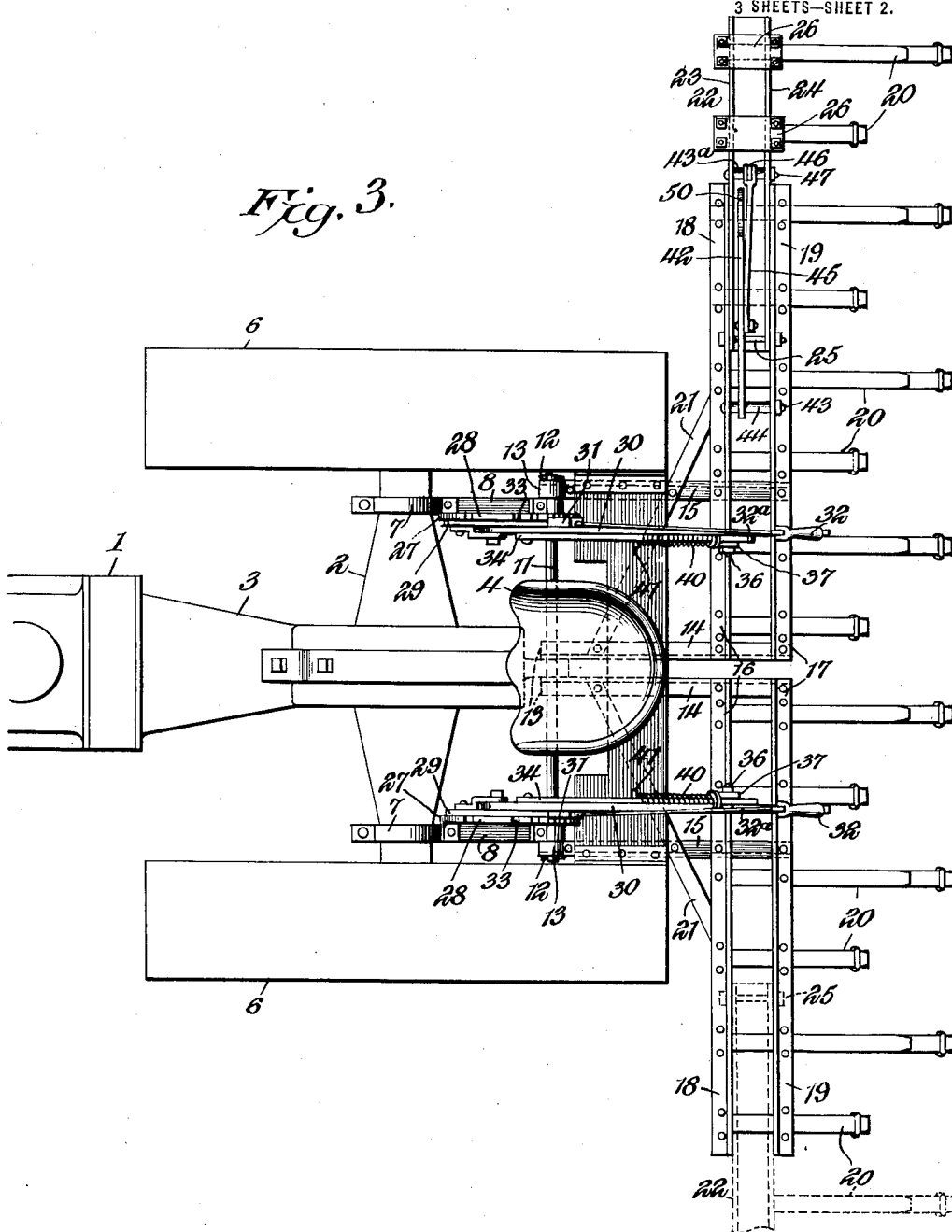
E. J. Siggers

ATTORNEY

APPLICATION FILED MAY 14, 1921.

Patented Jan. 24, 1922.

Fig. 3.



WITNESSES
Howard D. Cor.
Harry E. Seidel

Henry Rettig, INVENTOR,

E. G. Figgers.

ATTORNEY

H. RETTIG.
CULTIVATOR.
APPLICATION FILED MAY 14, 1921.

1,404,544.

Patented Jan. 24, 1922.

3 SHEETS—SHEET 3.

Fig. 4.

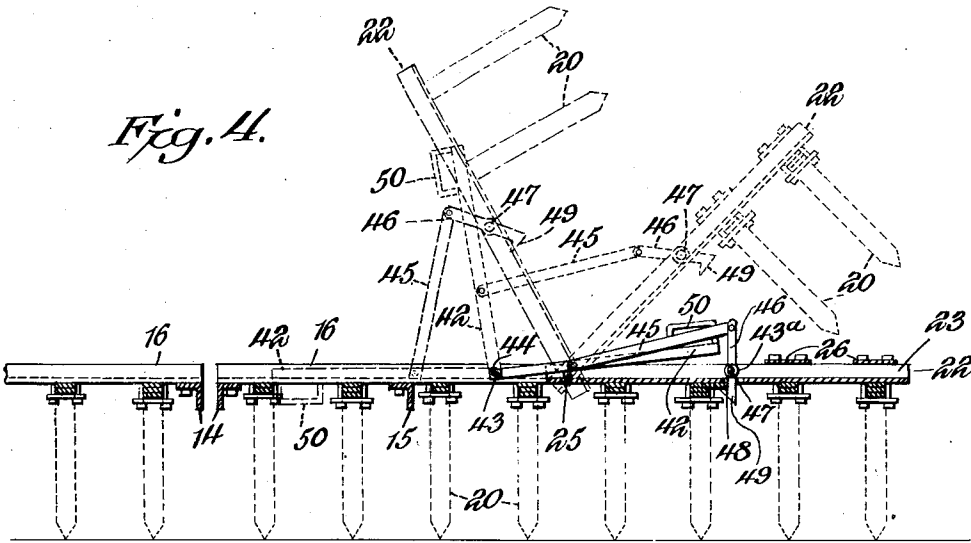
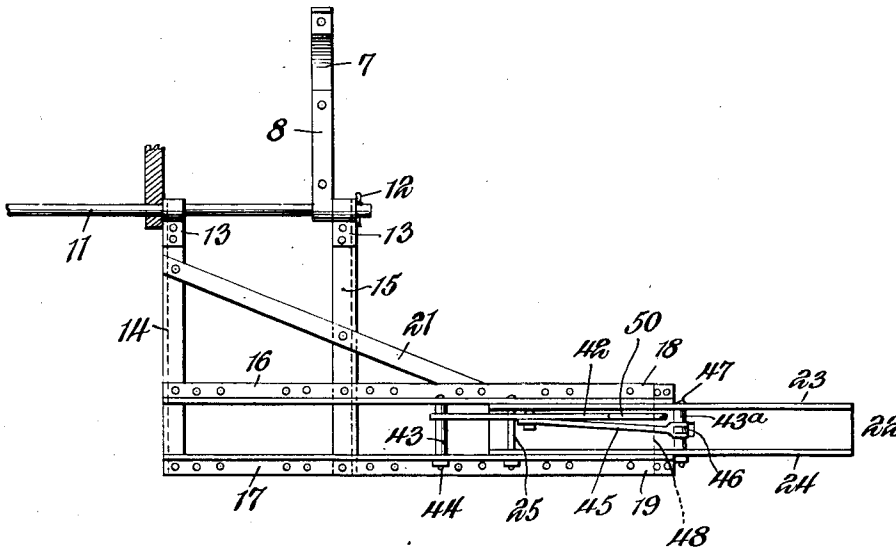


Fig. 5.



WITNESSES

Howard D. Orr.
Harry E. Seidel

Henry Rettig, INVENTOR,

BY

E. J. Siggers

ATTORNEY

UNITED STATES PATENT OFFICE.

HENRY RETTIG, OF REDLANDS, CALIFORNIA.

CULTIVATOR.

1,404,544.

Specification of Letters Patent. Patented Jan. 24, 1922.

Application filed May 14, 1921. Serial No. 469,434.

To all whom it may concern:

Be it known that I, HENRY RETTIG, a citizen of the United States, residing at Redlands, in the county of San Bernardino and State of California, have invented a new and useful Cultivator, of which the following is a specification.

This invention relates to cultivators and is more particularly directed to a cultivator which is capable of being used with a tractor for cultivating the soil of orchards.

A disadvantage of all implements of this kind is that when the same are operated on uneven ground one portion of the cultivator will always be more materially raised than the other and likewise the tools on the rigid frame are raised at one portion of the frame more than at any other portion. It will be seen that the penetrating power of the tool will be seriously affected, and unless some means is provided whereby one portion of the frame may work independently of the other portion, in order to counteract the different degrees of penetration of the tools attached to the frame, some portion of the ground will be less cultivated than other portions.

It is an object of this invention to provide a new and improved cultivator which comprises a plurality of sections pivoted at a point in the rear of a tractor in such a manner that the sections may move independently of each other in the same arc of a circle but in planes that are parallel to each other.

Another object of the invention is the provision of a new and improved cultivator which is formed in two sections movable independently of each other and in the same plane.

Another object of the invention is the provision of a new and improved cultivator which is formed of two sections, each section being resiliently held in depressed position so that as the sections are carried over uneven ground, there will be permitted a certain amount of play between the sections, thus insuring the same degree of penetration of all the tools.

Still another object of the invention is the provision of a new and improved cultivator which is not only provided with a plurality of independently movable main frames but with a plurality of auxiliary frames movable independently of the main

frames and adapted to be raised in an inoperative position when that portion of the cultivator meets with an obstacle in order to permit the tractor to maintain a direct forward travel.

This invention further contemplates a new and improved cultivator provided with independently movable main frames equipped with spaced tools and a tool-equipped auxiliary frame pivoted on the outer end of the main frames and adapted to be automatically locked thereon as the auxiliary frames are moved from an inoperative position to an operative position.

A further object of the invention is the provision of a new and improved cultivator provided with a plurality of alined frames, certain of said frames being adapted to be moved in a plane at right angles to the plane of movement of the other frames.

It is a still further object of the invention to provide a cultivator having a wide sweep with supporting frames and hand-operated controlling means whereby all the frames may be moved independently of the others.

The invention will be best understood from a consideration of the following detailed description taken in connection with the accompanying drawing forming part of this specification, with the understanding, however, that the invention is not confined to any strict conformity with the showing in the drawing, but may be changed and modified so long as such changes and modifications mark no material departure from the salient features of the invention as expressed in the appended claims.

In the drawings:—

Fig. 1 is a vertical longitudinal view in section of the cultivator.

Fig. 2 is a rear view of the cultivator showing the tool-equipped frames in operative position on a tractor.

Fig. 3 is a plan view of the cultivator disclosing the rear end of the tractor and the tool-equipped frame in position.

Fig. 4 shows a transverse section of the tool-equipped main frames and the auxiliary tool-equipped frames pivoted to the main frames.

Fig. 5 is a detail view of the auxiliary frame pivoted on the main frame disclosing a plan view of the operating mechanism for the auxiliary frame.

In the drawings, 1 designates generally

a tractor provided with a rear axle housing 2, a drive shaft housing 3 upon which is secured the seat 4, a steering wheel 5 and wheels 6.

5 Secured to the rear axle housing 2 by means of the straps 7 are rearwardly-extending brackets 8. The ends of the brackets are supported by means of brace rods 9 which are connected in any suitable
10 manner to brackets 10 on the drive shaft housing 3.

The ends of the brackets are perforated, and through these perforations is secured a rod 11 by means of cotter pins 12 passing
15 through perforations in the ends of this rod. Pivoted near the opposite ends of this rod by means of straps 13 are spaced angle bars 14 and 15. Spaced angle bars 16 and 17 are secured at right angles to the
20 ends of the angle bars 14 and 15, by means of rivets or bolts so that the free ends 18 and 19, respectively, of the bars 16 and 17, extend outwardly from the bars 14 and 15 and transversely of the tractor.

25 Spaced at intervals along these bars are secured tools 20. A brace bar 21 extending diagonally with respect to the bars 14, 15 and 16, 17 is secured to these bars and form a brace for the same.

30 The tools may not only be spaced along the frame but likewise they may be spaced relative to each other in such a manner as to form spaced rows of tools, as shown in Figs. 1 and 3.

35 While I have described one frame as pivoted to the bar 11, it must be remembered that another frame of similar construction is pivoted on this bar at its opposite end and extends in opposite directions rearwardly
40 of the tractor.

Upon the end of each of said frames, just described, is pivotally mounted an auxiliary frame 22 comprising parallel bars 23, 24 pivoted by means of the bolt 25 passing
45 through the parallel bars 23, 24 and the parallel bars 18, 19. The shanks of tools 20 which are similar in respect to the tools pivoted to the main frames are secured to the ends of each auxiliary frame by means
50 of the plates 26.

Upon each bracket 8 is secured a U-shaped member 27 provided with a toothed sector 28 and a bar 29 secured at its ends to the legs of the U-shaped member 27. An oper-
55 ating lever 30 is pivoted to the bar 29 and carries a pawl 31 operated by the bell crank lever 32 through a link 32^a to engage the notches 33 in the sector 28. A link 34 pivoted at one end to the lever 30 has a sliding
60 connection by means of the slot 35, in its opposite end and a pin 36 secured in the end of a bracket 37, the said bracket being formed by means of the rods 38, 39 which are secured to the angle bars 16, 17, respec-
65 tively. A compression spring 40, surround-

ing the link 34, engages the pin 41 at one end and the end of the bracket 37 at its other end in order to force the bracket rearwardly and maintain the tool-equipped frames in depressed position.

70 A lever 42 is pivoted on a sleeve 43 which is located on a bolt 44 passing through the angle bars 16, 17. The sleeve 43 and the sleeve 43^a are designed to maintain the bars 23 and 24 in spaced relation through the
75 bolts 44 and 47. The lever 42 is connected by means of a link 45 to a locking member 46 which is pivoted on the bolt 47 to the auxiliary frame 22. A plate 48 is secured to the angle bars 16, 17 and is adapted to coact
80 with the latch member 49 of the locking lever 42 on the pivoted member 46 to hold the auxiliary frame 22 in locked position on the main frame when the lever 42 is placed in its lowermost position between the
85 angle bars 16 and 17 of the main frame. Some form of means such as 50 is formed on the end of the lever 42 and provides a handle for grasping the lever 42 to operate the same. The handle 50 may be connected
90 by links to a lever pivoted near the seat 4.

The operation of my device is as follows. Either of the main frames may be raised or lowered by depressing the bell crank lever 32, releasing the pawl 31 from the notches
95 33 in the sector 28 and either raising or lowering the lever 30 whatever the position desired may be, to raise or lower one of the main frames from out of contact with the ground. It will be noted that a separate
100 lever 30 is employed to operate each main frame in order that each frame may be elevated or lowered independently of the other. If both main frames are lowered in operative position so that the tools 20
105 may penetrate the ground to be cultivated, it will be seen that they are movable independently of each other and that by reason of the compression spring 40 there will be permitted a movement between the two,
110 which is independent of each other, so that as the cultivator passes over uneven ground one frame may operate on the hilly portion while the other frame may be engaged in tearing the soil of the depressed portion
115 of the ground. This permits an even penetration of the soil by the tools which would not be the case were the frames of one piece so that one end would be more elevated than another and a greater penetration would
120 be had by one portion of the cultivator than by the other.

The auxiliary frames are adapted to lie for a portion of their length between the angle bars 16, 17 when in depressed position,
125 so that all the frames are in alinement with each other. When, in passing an object, it is desired to maintain a direct line of forward travel, either auxiliary frame may be raised in an inoperative position by grasping
130

the handle of the lever 42, raising said lever, tilting the rod 46 and forcing the latch 49 from operative engagement with the bar 48. As the link 45 and the locking member 46 are drawn very nearly in alinement with each other, a continued raising of the lever 42 will exert a pull upon the auxiliary frame 22 and raise it through the position shown in dotted lines in Fig. 4 until it has reached its most elevated position, also shown in dotted lines in Fig. 4, where it will be placed in inoperative position, and the driver may proceed with the cultivator and pass the object without changing his direction of travel. As soon as the object has been passed, he may again return the lever and links to their former position when the auxiliary frame will again engage the soil by means of its tools 20, and the latch bar 46 will engage the bar 48, locking the auxiliary frame to the main frame.

If it be necessary to back the tractor, the operator may raise all the alined frames by means of the two levers 30 without operating the lever 42.

The tools operate just behind the drive wheels of the tractor, which makes it much easier to handle the tractor since the tool-equipped frames are constantly within the vision of the driver and it is not necessary for him to turn around to inspect the working of the cultivator.

This cultivator is not adapted to one kind of tractor but may be applied to all makes of tractors and can be used for any kind of cultivating purposes. Furthermore, the tool-equipped frames may readily be replaced by other frames which are adapted for different purposes of cultivation by removing the two bolts or pins which fasten the links 34 to the brackets 37 and the cotter pins 12 from the rod 11, when the rod 11 may be removed from the brackets 8 and the auxiliary frames detached.

The cultivator may be equipped with but one main frame and an auxiliary frame adapted to be extended outwardly from the side of the tractor, or there may be employed two main frames one of which is equipped with an auxiliary frame, or a main frame and two auxiliary frames pivoted to the opposite side of the main frame or two main frames each being provided at their outer ends with a pivotally mounted auxiliary frame.

What is claimed is:

1. In a cultivator including a tractor provided with a rear axle housing, the combination of a plurality of tool-equipped frames pivoted in spaced relation to said housing and adapted to be raised or lowered rearwardly of the tractor, and a plurality of tool-equipped auxiliary frames pivoted on the first-mentioned frames.

2. In a cultivator including a tractor pro-

vided with a rear axle housing, the combination of a plurality of tool-equipped frames pivoted in spaced relation to said housing and adapted to be raised or lowered rearwardly of the tractor, a plurality of tool-equipped auxiliary frames pivoted on the first-mentioned frames, and means for moving the auxiliary frames in a plane perpendicular to the plane in which the first-mentioned frames are operated.

3. In a cultivator including a tractor provided with a rear axle housing, the combination with a plurality of tool-equipped main frames pivoted in spaced relation to said housing and adapted to be raised or lowered rearwardly of the tractor, and a plurality of tool-equipped auxiliary frames pivoted on and in alinement with the main frames.

4. In a cultivator including a tractor provided with a rear axle housing, the combination with a plurality of tool-equipped main frames pivoted in spaced relation to said housing and adapted to be raised or lowered rearwardly of the tractor, a plurality of tool-equipped auxiliary frames pivoted on and in alinement with the main frames, and means for moving the auxiliary frames out of alinement with the main frame.

5. In a cultivator including a tractor provided with a rear axle housing, the combination of a plurality of tool-equipped main frames pivoted in spaced relation to said housing and adapted to be raised or lowered rearwardly of the tractor, a plurality of tool-equipped auxiliary frames pivoted on the main frames, means for raising or lowering the auxiliary and main frames toward and away from the rear of the tractor, and means for operating the auxiliary frames in a plane perpendicular to the plane in which the first-mentioned frames are adapted to be operated.

6. In a cultivator including a tractor provided with a rear axle housing, the combination of a plurality of tool-equipped frames pivoted in spaced relation to said housing in horizontal alinement with each other, and movable independently of each other, and an auxiliary tool-equipped frame pivoted on and in horizontal alinement with one of the first-mentioned frames.

7. In a cultivator including a tractor provided with a rear axle housing, the combination of a plurality of tool-equipped frames pivoted in spaced relation to said housing in horizontal alinement with and movable independently of each other, an auxiliary tool-equipped frame pivoted on and in horizontal alinement with one of the first-mentioned frames, means for raising or lowering said alined frames, and means for maintaining the frames in depressed position.

8. In a cultivator including a tractor pro-

vided with a rear axle housing, the combination of a plurality of tool-equipped frames in horizontal alinement pivoted in spaced relation to said housing and movable independently of each other, and an auxiliary tool-equipped frame pivoted on and adapted to be seated for a portion of its length within one of the first-mentioned frames.

9. In a cultivator including a tractor provided with a rear axle housing, the combination of a plurality of tool-equipped frames pivoted in spaced relation to said housing and adapted to be raised or lowered rearwardly of the tractor, and a plurality of tool-equipped auxiliary frames pivoted on the first-mentioned frames, all of said frames being adapted to be moved independently of each other.

10. In a cultivator including a tractor provided with a rear axle housing, the combination of a plurality of frames equipped with parallel rows of spaced tools and pivoted in spaced relation to said housing, said frames being adapted to be raised or lowered in a plane rearwardly of the tractor, and a plurality of auxiliary frames provided with spaced parallel rows of tools and adapted to be moved in a plane perpendicular to the plane of the movement of the first-mentioned frames in order to aline the parallel rows of tools of the auxiliary frames with the parallel rows of tools of the first-mentioned frame when said auxiliary frame is placed in operative position.

11. In a cultivator including a tractor provided with a rear axle housing, the combination of a plurality of main frames comprising bars secured at right angles to each other, certain of said bars being pivoted in spaced relation to the axle housing, the other bars being provided with tools, and an auxiliary frame pivoted between the second-mentioned bars and adapted to be seated for a portion of its length between the second-mentioned bars when the auxiliary frame is placed in operative position.

12. In a cultivator including a tractor provided with a rear axle housing, the combination of a pair of brackets secured on said housing, a rod secured in the free ends of the brackets, a plurality of tool-equipped frames pivoted on said rod and movable independently of each other, a U-shaped member secured on each bracket, a lever pivoted on each of said U-shaped members, and a link connecting each lever with one of the tool-equipped frames.

13. In a cultivator including a tractor provided with a rear axle housing, the combination of a pair of brackets secured on said housing, a rod secured in the free ends of the brackets, a plurality of tool-equipped frames pivoted on said rod and movable independently of each other, a U-shaped member secured on each bracket, a lever pivoted

on each of said U-shaped members, links connecting each of said levers with one of the tool-equipped frames, and auxiliary tool-equipped frames pivoted near the outer end of said first-mentioned frames and adapted to be moved at right angles to the plane of the movement of the first-mentioned frames.

14. In a cultivator provided with a rear axle housing, a bracket supported on said housing, tool-equipped main frames pivoted on said bracket, a tool-equipped auxiliary frame pivoted near the end of one of the main frames, means for raising or lowering the auxiliary frame, and means for locking the auxiliary frame in lowered position.

15. In a cultivator including a tractor provided with a rear axle housing, spaced brackets secured at one end to the housing, a rod secured in the free ends of the brackets, a plurality of tool-equipped main frames pivoted on said rod and movable independently of each other, a tool-equipped auxiliary frame pivoted to one of the main frames and adapted to be moved in a vertical plane passing through the main frame, and means for locking the auxiliary frames in operative position.

16. In a cultivator including a tractor provided with a rear axle housing, spaced brackets secured on the rear axle housing, a plurality of tool-equipped main frames in horizontal alinement and pivoted on said brackets and adapted to be raised or lowered rearwardly of the tractor, a tool-equipped auxiliary frame pivoted on one of and in horizontal alinement with the main frames, means for depressing the auxiliary frame in horizontal alinement with the main frames, and means for automatically locking the auxiliary frame to the main frame when said auxiliary frame is depressed.

17. In a cultivator including a tractor provided with a rear axle housing, a bracket secured to said housing, a rod mounted in the free ends of said bracket, a plurality of tool-equipped main frames pivoted on the rod and adapted to be raised or lowered rearwardly of the tractor, a tool-equipped auxiliary frame pivoted on and seated within one of the main frames for a portion of its length, means for locking the auxiliary frame to the main frame, and means for maintaining all the frames in a depressed position.

18. In a cultivator including a tractor provided with a rear axle housing, the combination of brackets secured on said housing, a member for bracing the free ends of the brackets, a rod secured in the free ends of said brackets, a plurality of tool-equipped main frames pivoted in horizontal alinement on said rod, said frames being movable independently of each other, means for maintaining said frames in depressed position, a tool-equipped auxiliary frame pivoted on one of said main frames, means for operating the

main frames independently of each other, and means for operating the auxiliary frame at right angles to the main frame, said means automatically locking the auxiliary frame in an operative position and in any of the positions of the main frame.

19. In a cultivator including a tractor provided with a rear axle housing, the combination of brackets secured on said housing, a rod mounted on the free ends of said brackets, a plurality of tool-equipped main frames pivoted on the rod, a tool-equipped auxiliary frame pivoted on the end of one of the main frames, a lever pivoted on the main frame, a latching member pivoted on the auxiliary frame and connected by a link to the lever, said lever being adapted to raise or lower the auxiliary frame.

20. In a cultivator including a tractor, provided with a rear axle housing, the combination with a plurality of tool-equipped main frames pivoted in spaced relation to said housing, and an auxiliary tool-equipped auxiliary frame pivoted on one of the main

frames, a lever for raising the auxiliary frame pivoted to said main frame carrying the auxiliary frame, a latching member pivoted on the auxiliary frame and connected to the lever by a link, said lever being adapted when lowered to depress the auxiliary frame into operative position and force the latching mechanism into locking engagement with the main frame whereby the auxiliary frame is locked to the main frame.

21. In a cultivator including a tractor provided with a rear axle housing, a main frame pivoted in spaced relation to said housing, said main frame comprising spaced rearwardly extending bars, and spaced angle bars secured to the rearwardly extending bars and provided with tools, an auxiliary frame comprising spaced bars contiguous to and pivoted to the angle bars of the main frame, said last mentioned bars being provided with tools.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature.

HENRY RETTIG.