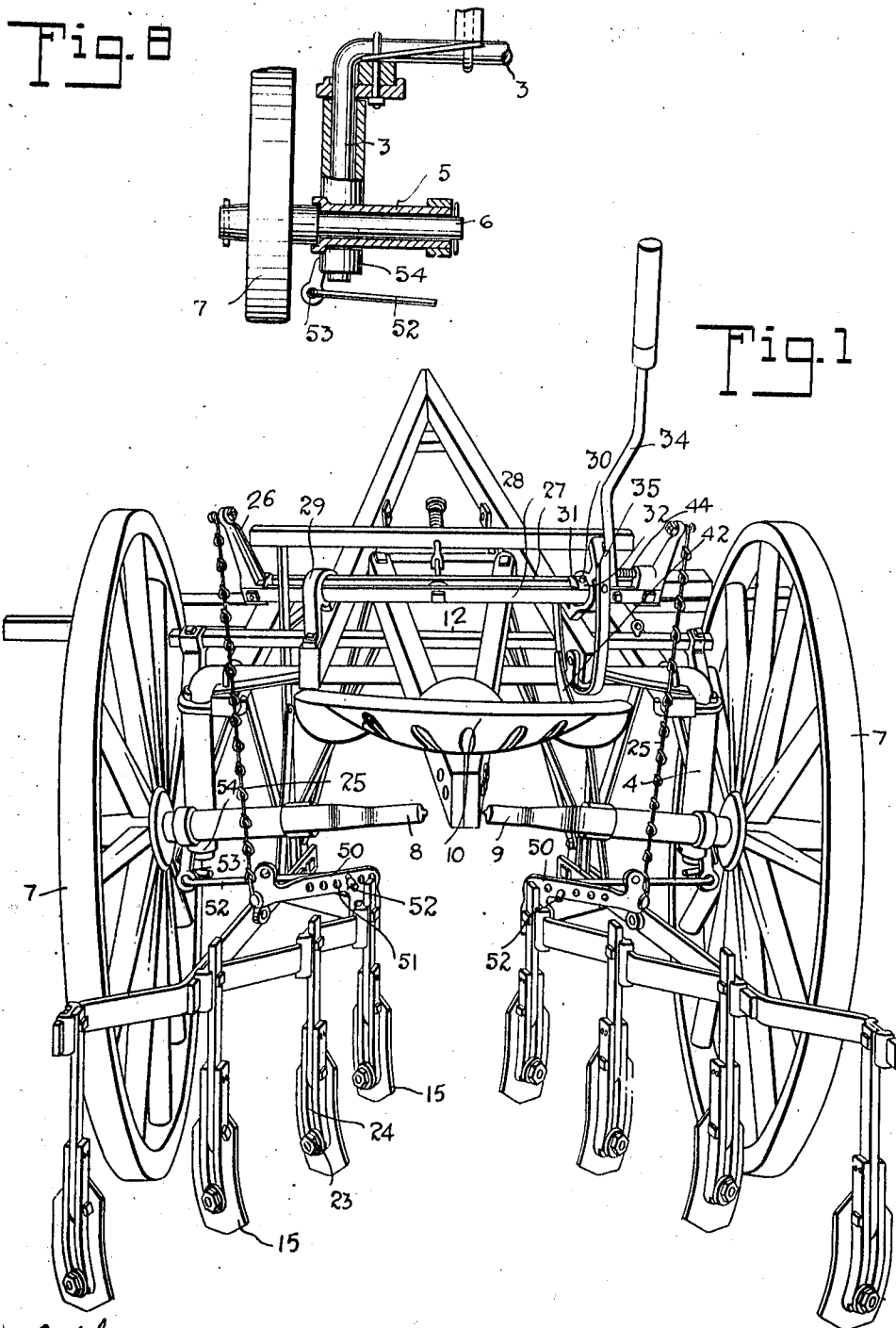


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APPLICATION FILED FEB. 24, 1911.
1,004,374.
Patented Sept. 26, 1911.
4 SHEETS—SHEET 1.



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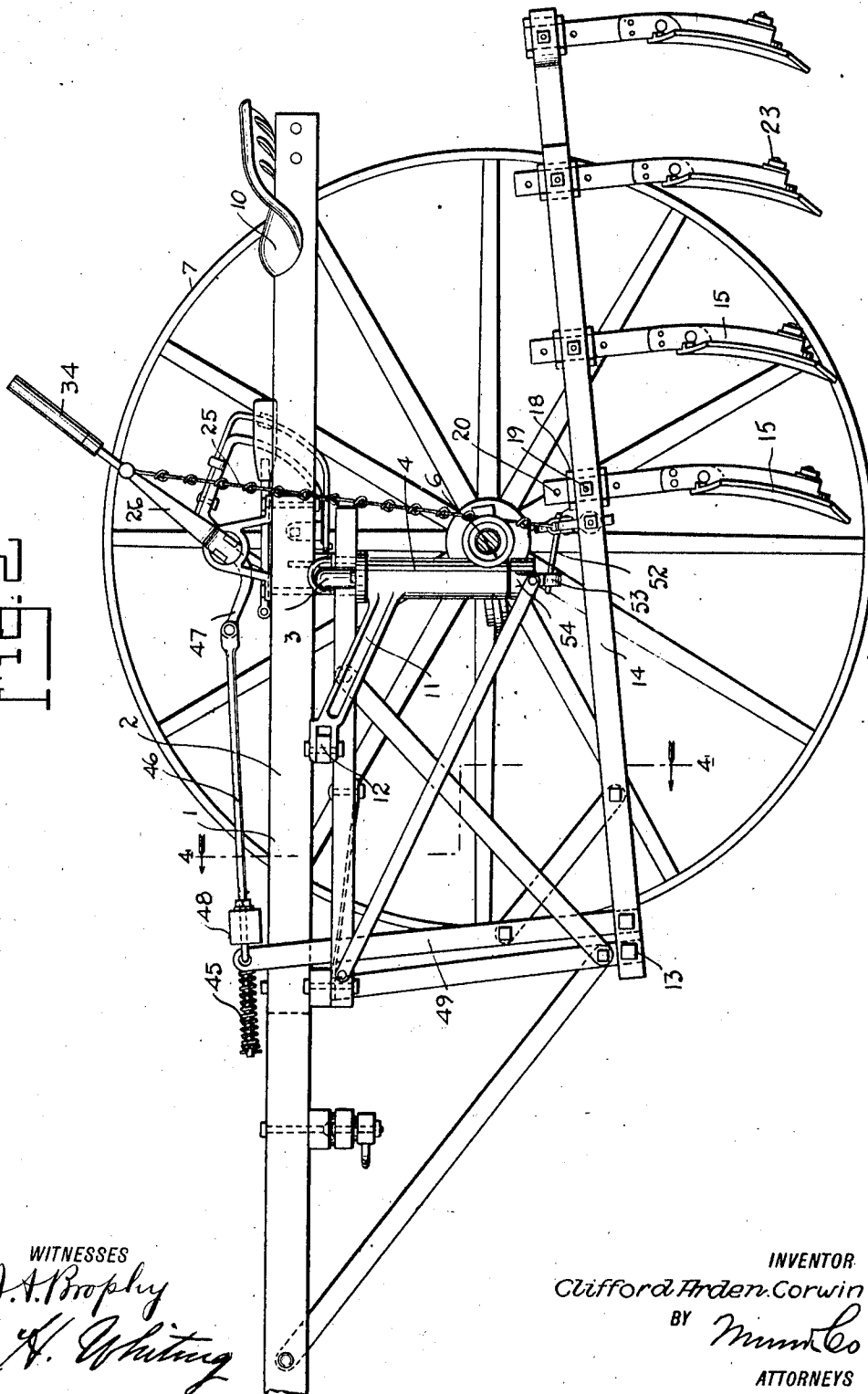
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4 SHEETS-SHEET 2

Fig. 2



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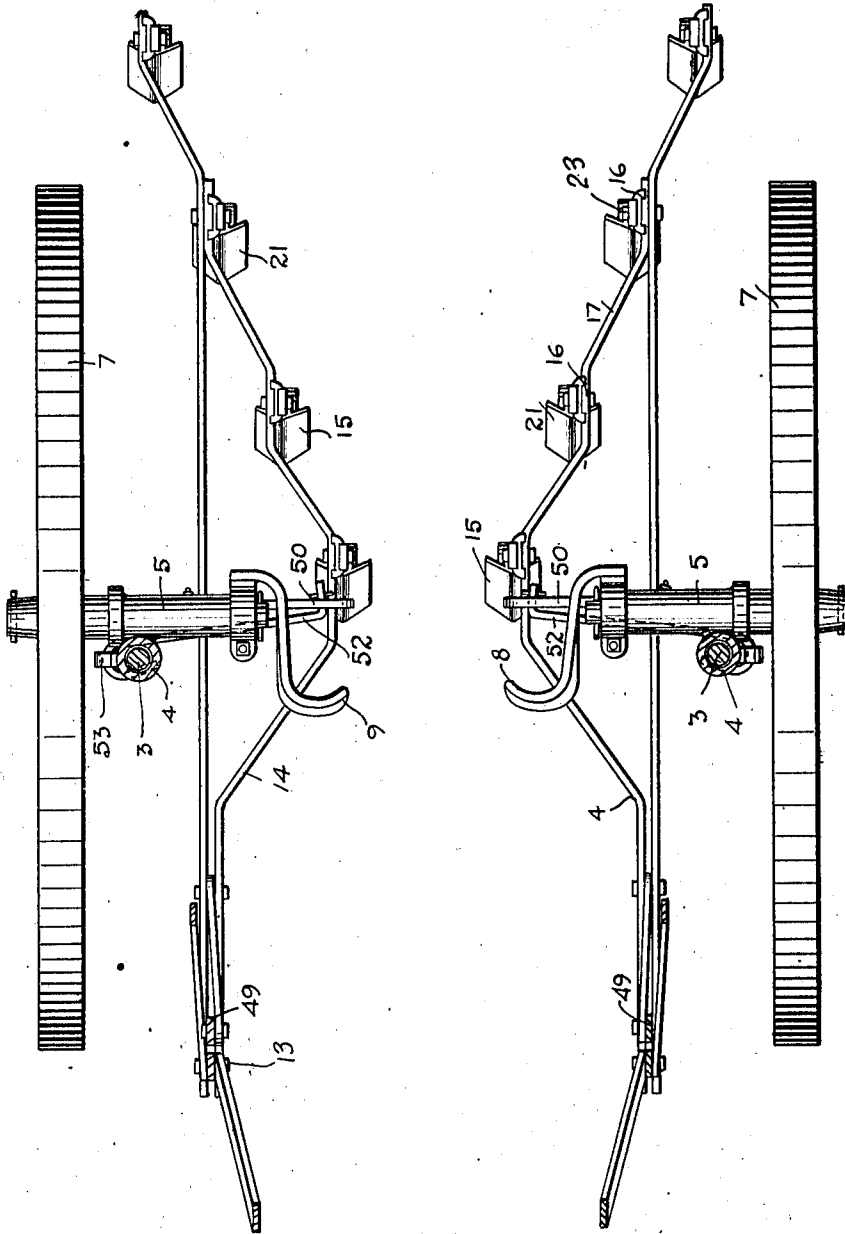
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4 SHEETS-SHEET 3.

1,004,374.



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Fig. 1

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4 SHEETS—SHEET 4.

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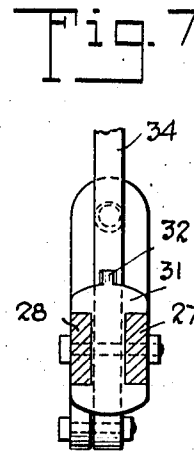
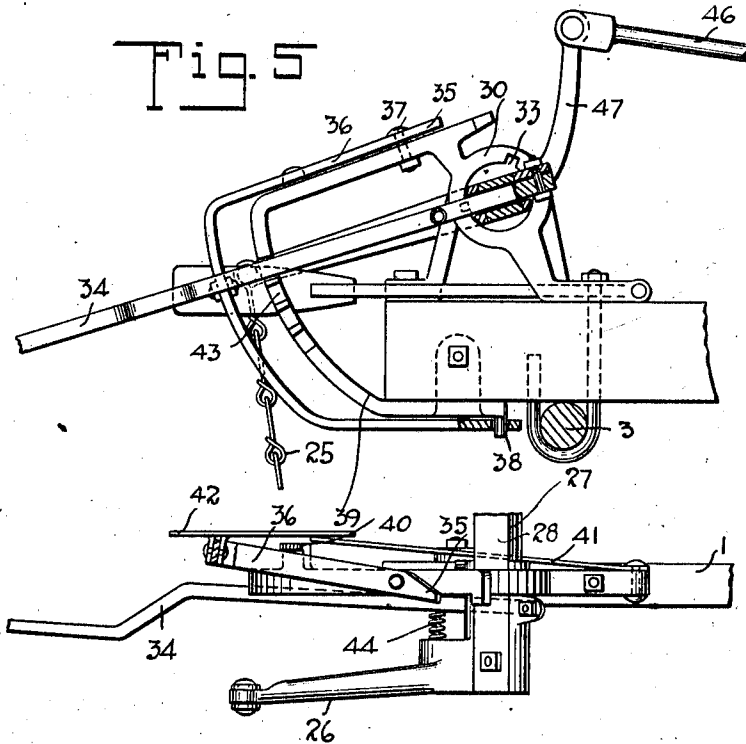
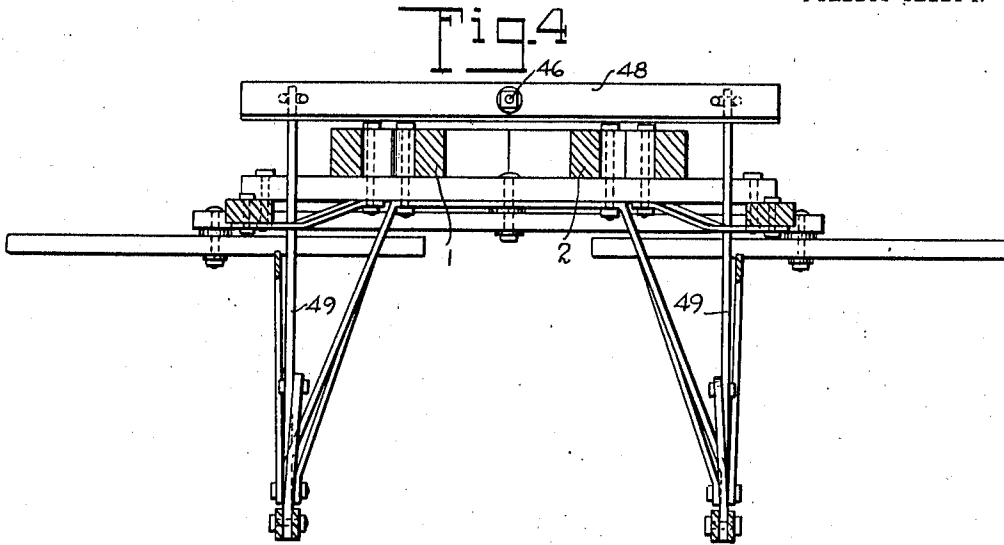


Fig. 6

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UNITED STATES PATENT OFFICE.

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1,004,374.

Specification of Letters Patent. Patented Sept. 26, 1911.

Application filed February 24, 1911. Serial No. 610,470.

To all whom it may concern:

Be it known that I, CLIFFORD ARDEN CORWIN, a citizen of the United States, and a resident of Riverhead, in the county of Suffolk and State of New York, have invented a new and Improved Cultivator, of which the following is a full, clear, and exact description.

This invention relates to a new and improved adjustable cultivator.

An object of this invention is to provide a cultivator which will be simple in construction, inexpensive to manufacture, strong, durable, readily adjusted, and easily operated.

A further object of this invention is to provide a cultivator with a series of hoes connected together so as to be adjusted simultaneously, with means for locking them in an elevated position out of contact with the ground, and with means for locking them in a plurality of adjusted positions intermediate their uppermost and lowermost positions.

A still further object of this invention is to provide a plurality of hoes connected together, with means for adjusting their position, and with means for taking up the shock incident to the change of position of said hoes.

A still further object of this invention is to provide a cultivator with a plurality of wheels, forming a carriage to support the same, said wheels being adjustable relative to the frame so as to guide the cultivator.

These and further objects, together with the construction and combination of parts, will be more fully described hereinafter and particularly set forth in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views, and in which—

Figure 1 is a rear perspective view in elevation; Fig. 2 is a side view in elevation; Fig. 3 is a fragmentary top plan view, with parts removed to show the underlying structure; Fig. 4 is a vertical section on the line 4—4 of Fig. 2; Fig. 5 is an enlarged fragmentary view in elevation, partly in section, of the locking mechanism for securing the hoe-supports in their raised position; Fig. 6 is a top plan view of the mechanism illustrated in Fig. 5; Fig. 7 is an enlarged fragmentary vertical section of

the transverse bar on the hoe-support operating mechanism; and Fig. 8 is an enlarged fragmentary section showing the pivotal relation of the wheels to the bridge of the frame, whereby the wheels may be manipulated relative to the frame, for the purpose of steering and directing the cultivator.

Referring more particularly to the separate parts of this invention as embodied in the form shown in the drawings, 1 indicates a carriage which is adapted to support the cultivating mechanism, and which itself is formed in a peculiar manner so as to properly direct the cultivating operation. The carriage 1 is provided with a main frame 2, which is supported in any suitable manner on an inverted U-bridge 3, the downwardly-extending arms of which are provided with sleeves 4 rotatably supported thereon. Each of these sleeves 4 is provided with a bearing 5, as more clearly illustrated in Fig. 8, forming a suitable support, on which are journaled stub-axles for wheels 7, which rollingly support the carriage on the ground.

Connected to the sleeves 4, preferably to the sides of the bearings 5, there are provided stirrups 8 and 9, which permit the operator sitting in a seat 10 on the frame to manipulate the wheels 7, so as to direct the operation of the cultivator.

In order that the wheels 7 may move in unison in the same direction, the sleeves 4 are provided with arms 11, which are connected together by a cross bar 12. Pivotal support on the frame 2 in any well known manner, as at 13, there are provided arms 14, which may be termed supports, and are adapted to support a plurality of hoes or cultivating teeth 15. The supports 14 are preferably formed in a peculiar manner, as will be more clearly seen by reference to Fig. 3, in that they are provided with a plurality of longitudinally-extending steps 16, connected together by diagonally-disposed portions 17, so that the hoes 15, which are adjustably connected at the steps, may be located in transversely and longitudinally spaced relation, so that each succeeding hoe will turn up the ground adjacent that turned up by the preceding hoe. The hoes 15 may be adjustably connected to the supports 14 in any suitable manner, as by engaging slotted members 18 on the supports, and being adjustably connected thereto by means of bolts 19, which are adapted

to engage in any one of a plurality of openings 20 in the shank of the hoe. The hoe itself may be made of any desirable form of construction having the usual blade thereon, the slot being secured to the supports in the manner above described.

For the purpose of controlling the vertical position of the hoes 15 and the supports 14, the supports 14 are connected in any suitable manner, as by means of chains 25, to arms 26 secured between transversely-extending bars 27 and 28 in any suitable manner, the bars 27 and 28 extending through bearings 29 and 30. Adjacent the bearing 30, there is provided an I-shaped member 31, which may be in the form of a casting, and is inserted between the bars 27 and 28, and formed with circular faced heads, so as to permit the bars to rotate properly in the bearing 30. This casting 31 may be provided with a lug 32, which is adapted to be inserted through a slot 33 (see Fig. 5), so that when it is on the inside of the bearing and the bars 27 and 28 rotated to their normal position, the bars will be prevented from slipping out endwise. Secured to the bars 27 and 28, which together form a composite shaft, there is provided a lever 34, which is adapted to manipulate the shaft, and extends in juxtaposition to the seat 10, so that it can be readily manipulated by the operator. The lever 34 is held in its uppermost position, corresponding to the uppermost positions of the supports 14 and the hoes 15 connected thereto, by engaging with a projecting toe 35 on a latch lever 36, as illustrated in Fig. 1. The latch lever 36 is of peculiar form, as more clearly shown in Figs. 5 and 6, in that it is irregular U-shaped, and pivoted at a plurality of points 37 and 38 to a bracket 39 secured to the frame and to the bearing 30. The latch lever 36 is normally held in the position illustrated in Fig. 6, where its further motion is limited by a stop 40 on the bracket 39, by means of a leaf spring 41, which engages a plate 42 connected to the latch lever 36. The plate 42 is in such co-operative position with respect to the seat 10 that the operator can manipulate it by moving his knee sidewise when in engagement therewith. When it is desired to drop the hoe-supports 14 to their lowermost position, it is merely necessary for the driver to force the plate 42 over to the right by means of his knee, thus removing the toe 35 from engagement with the lever 34, when the weight of the parts will cause the composite shaft connected to the lever, and the lever, to rotate. If it is desired to have any position of adjustment intermediate the lowermost and the uppermost position, the side of the lever may be forced into any one of a plurality of notches 43 provided on the side of the bracket 39, and held in this position by means of a spring 44, which engages the

lever on one side and an enlargement on one of the arms 26 on the other side. The shock incident to the dropping of the cultivating members may be taken up by a spring 45 on a rod 46, which is connected to an arm 47 secured to the composite shaft formed of the members 27 and 28. This rod 46 extends through an evener 48, against which the spring 45 is adapted to abut, and which is connected to the supports 14 in any suitable manner, as by means of hangers 49.

For the purpose of adjusting the transverse position of the cultivating mechanism, each of the supports 14 is provided with a peculiarly-shaped member 50, which is pivotally connected to one of the bars comprising the support 14, and loosely connected to the other of the bars by means of a slot arrangement. Each of these members is provided with a series of holes or openings 51, in which are adapted to be detachably inserted hooks 52 secured to any suitable portion of the frame in any suitable manner, as by means of being connected with arms 53 on collars 54 secured in any suitable manner to the downwardly-extending legs of the inverted U-shaped bridge 3. It will be readily seen that by adjusting the hooks 52 in different openings in the members 50, the relative position of the cultivating members can be varied, and thus adjust their scope of operation. The members 50 are also provided with lugs, whereby the chains 25 may be indirectly connected to the supports 14.

The operation of the device will be readily understood when taken in connection with the above description. The cultivator is drawn over the ground by any suitable motive power, such as draft animals attached to the frame, and the operator sits in the seat 10, so that he may control the operation of the cultivator. Before starting, the relative position of the cultivating members can be adjusted by means of the hooks 52, which can be made to engage in one of the openings 51 in the members 50. The cultivating members can be dropped to their lowermost position by the operator manipulating the plate 42 with his knee, thus releasing the latch lever 36. The shock incident to the dropping of the cultivating members will be taken up by the spring 45. If the lowermost position of the cultivating members digs deeper than is desired, the operator can adjust their position by raising the lever 34 and locking it in any adjusted position by engagement with the grooves 43, where it is yieldingly held by means of the spring 44. When the operator desires to direct the cultivator to one side or the other, either because the cultivator is drawn from a distance, or to avoid an obstruction, or cultivate a little closer or farther from a row, it is merely necessary for him to manipulate one stirrup or the other with his feet,

so as to direct the cultivator to the right or to the left. By pressing forward on the stirrup 8, the wheels will be canted to the left simultaneously because they are operatively connected together, and by pressing the stirrup 9, they will be canted to the right, thus steering the cultivator in the direction in which they are canted.

It will thus be seen that there is provided a simple and efficient cultivator, which can be adjusted to any width of row, and to any depth of digging, and which can be directed to cultivate to a nicety heretofore unattained.

While I have shown one embodiment of my invention, I do not wish to be limited to the specific details thereof, but desire to be protected in various changes, alterations and modifications which may come within the scope of the appended claims.

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

1. The combination with a carriage, of a plurality of cultivating members adjustably mounted on the carriage, the said members comprising supports and hoes thereon, a shaft rotatably mounted on the carriage, arms connected to the shaft, connections between the said arms and the supports, a lever in operative relation with the said shaft, means for locking the lever in position, a knee-plate operatively connected to the said means, movement of which releases the said locking means, and resilient means for holding the knee-plate in position, movement of the knee-plate being against the pressure of the said resilient means.

2. The combination with a carriage, of supports movably mounted thereon, hoes on the supports, a bridge carried by the carriage, each support carrying a member having a plurality of holes therein, means carried by the bridge for engagement in any one of the holes, whereby the said supports and hoes may be adjusted in position, a shaft mounted on the carriage, arms connected to the shafts, and means connecting the arms and supports, a lever for operating the shaft, means for locking the lever in position, together with a knee-plate engaging the said locking means for releasing the said lever.

3. The combination with a frame, having an inverted U-shaped bridge, of wheels pivotally mounted on said bridge so as to swing transversely of said frame, supports pivotally connected to said frame, hoes on said supports, collars mounted on said inverted U-shaped bridge, members having a plurality of holes therein, connected to said support, hooks secured to said collars, adapted to engage said openings so as to adjust the transverse position of said supports and thus of said hoes, a shaft rotatably mounted on said frame, arms connected to said shaft,

flexible connections connecting said arms to said supports, a lever for manipulating said shaft, a latch lever for locking said lever in position, a knee-plate secured to said latch-lever and adapted to release said first-mentioned lever, and a spring for resisting the movement of said knee-plate

4. The combination with a frame, having an inverted U-shaped bridge, of wheels pivotally mounted on said bridge so as to swing transversely of said frame, supports pivotally connected to said frame, hoes on said supports, collars mounted on said inverted U-shaped bridge, members having a plurality of holes therein, connected to said support, hooks secured to said collars, adapted to engage said openings so as to adjust the transverse position of said supports and thus of said hoes, a shaft rotatably mounted on said frame, arms connected to said shaft, flexible connections connecting said arms to said supports, a lever for manipulating said shaft, a latch lever for locking said lever in position, a knee-plate secured to said latch-lever and adapted to release said first-mentioned lever, a spring for resisting the movement of said knee-plate, and additional means for locking said last-mentioned lever in a plurality of adjusted positions.

5. The combination with a carriage, of a plurality of cultivating members on said carriage, a composite shaft rotatably mounted on said carriage, having a plurality of transversely-extending bars, arms secured between said bars, flexible connections between said arms and said cultivating members, a lever for manipulating said shaft to vary the position of said cultivating members, and means for locking said lever in position.

6. The combination of a carriage, of supports movably mounted thereon, hoes on the supports, a shaft mounted on the carriage, a lever on the shaft, arms on the shaft, means connecting the arms and the supports, a latch lever adjacent the first said lever, the latch lever being pivotally supported at its ends, one end of the latch lever engaging the first lever when the first lever is in uppermost position with the hoes above the ground, a plate carried by the latch lever, a spring engaging the plate, whereby movement of the plate will move the latch lever against the pressure of the said spring and move the first lever and the latch lever out of engagement.

7. The combination of a carriage, a plurality of supports movably mounted thereon, a plurality of hoes on each support, a shaft movably mounted on the carriage, a lever on the shaft, arms on the shaft, members connecting each arm and each support whereby movement of the lever will raise the supports and hoes, a latch lever of U-shape movably mounted adjacent the first

lever, the latch lever being pivotally supported adjacent its ends, one end of the latch lever forming a toe for engagement with the first lever, in order to hold it in raised position, and a plate carried by the latch lever at an intermediate portion thereof, a spring engaging the plate to hold the levers in engagement.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CLIFFORD A. CORWIN.

Witnesses:

GEORGE W. HILDRETH,
CORNELIA G. HAVENS.