

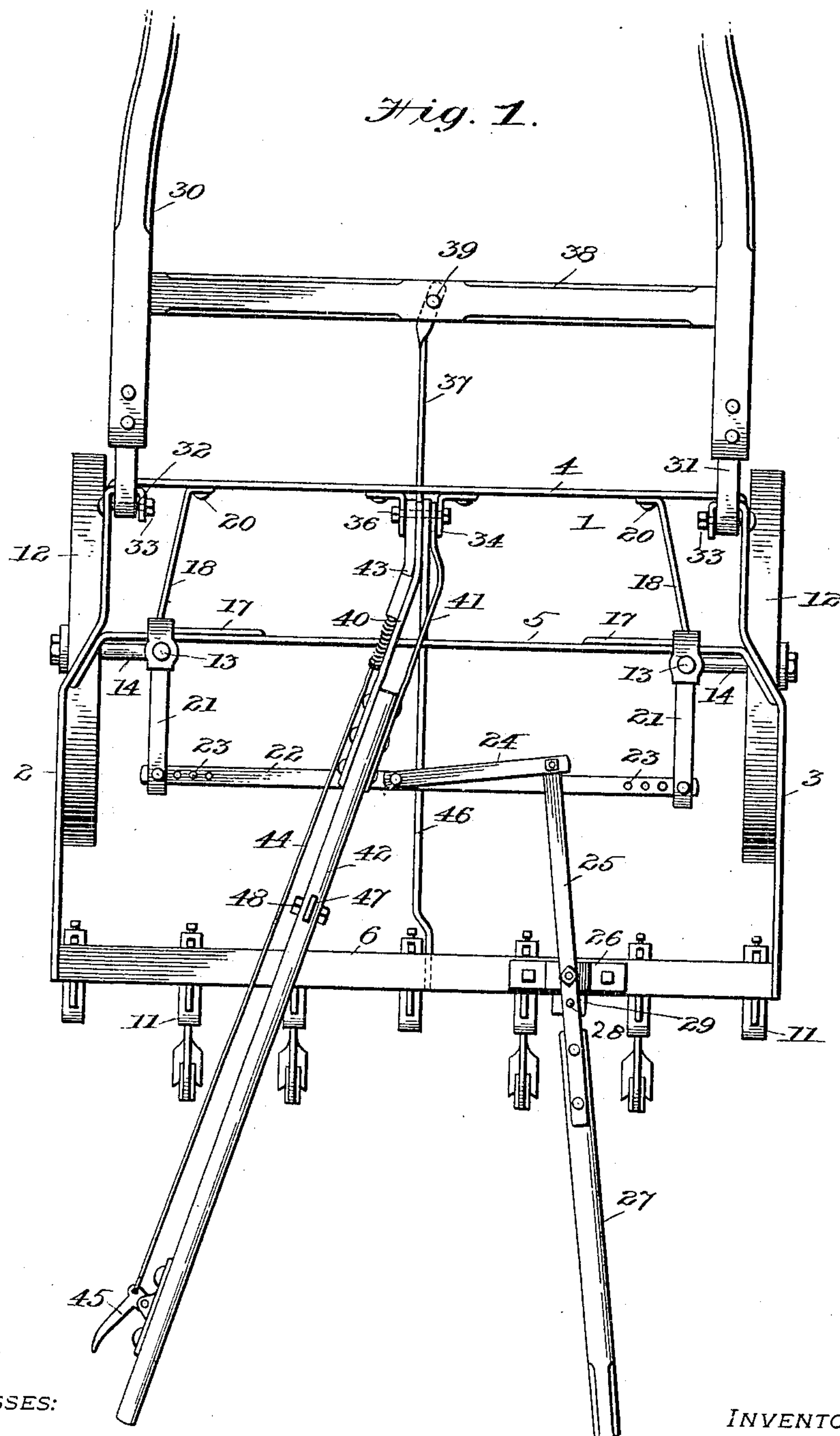
No. 819,836.

PATENTED MAY 8, 1906.

S. L. ALLEN.
CULTIVATOR.

APPLICATION FILED FEB. 18, 1903.

2 SHEETS—SHEET 1.



WITNESSES:

Jno. T. Cross,
Edw. W. Vail Jr.,

INVENTOR:

Samuel L. Allen,
by Horae Pettit.

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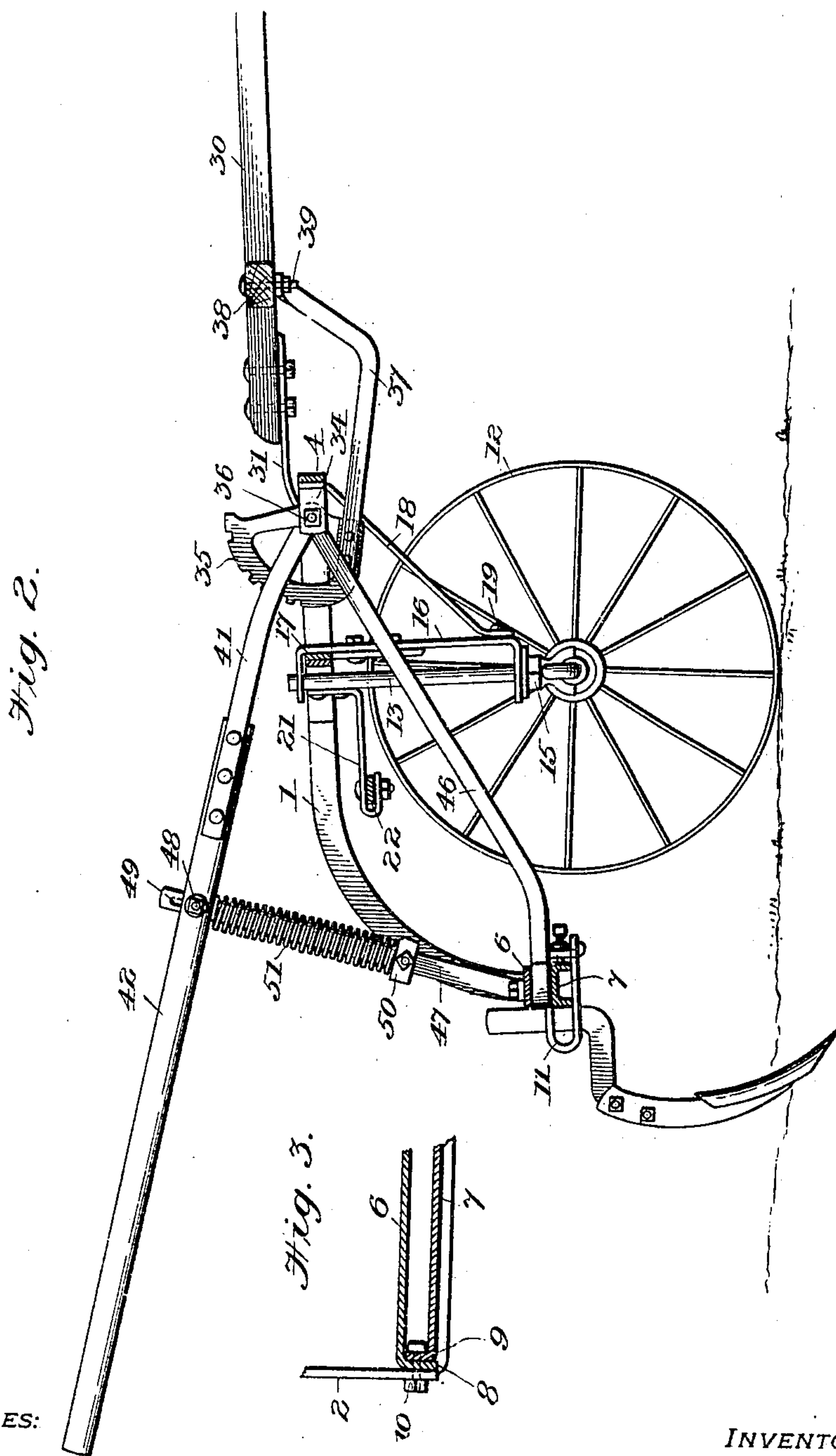
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UNITED STATES PATENT OFFICE.

SAMUEL L. ALLEN, OF MOORESTOWN, NEW JERSEY.

CULTIVATOR.

No. 819,836.

Specification of Letters Patent.

Patented May 8, 1906.

Application filed February 18, 1903. Serial No. 143,942.

To all whom it may concern:

Be it known that I, SAMUEL L. ALLEN, a citizen of the United States, and a resident of Moorestown, State of New Jersey, 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 certain improvements in cultivators, and more particularly to that class known as "pivot-wheel walking-cultivators."

The objects of my invention are, first, to provide a simple inexpensive machine of the type stated and to generally improve its construction and efficiency; second, to provide a pivot-wheel cultivator having handle-bars for the use of the operator in steadying the machine, which also serve as levers, one for raising and lowering the gang-frame to regulate the depth of penetration of the teeth into the soil and the other serving to turn the pivot-wheels for the purpose of steering the machine, and, third, in providing an improved form of supporting-frame and gang together with improved means for attaching the shafts of the machine.

With these objects in view my invention consists in the construction, arrangement, and combination of parts, such as will be fully set forth hereinafter and particularly noted in the claims made hereto.

Referring to the accompanying drawings, Figure 1 is a plan view of a cultivator constructed in accordance with my invention. Fig. 2 is a side elevation of the same, the teeth of the gang being shown as entering the ground; and Fig. 3 is a detail section illustrating the end of the gang-frame.

In carrying out my invention I provide a main frame 1, which is substantially rectangular in form, consisting of the side bars 2 and 3 and the transversely-disposed front bar 4 and a transversely-disposed bar 5, located a short distance in rear of the front bar and connected at its ends to the side bars 2 and 3. To the rear ends of the two side bars 2 and 3 are rigidly connected the twin bars 6 and 7, which form the gang-frame. The upper bar 6 of the gang-frame comprises a flat steel bar having its ends turned down, as illustrated at 8, while the lower bar 7 is channel-iron or steel and has its ends turned up, as illustrated at 9 in Fig. 3 of the drawings, so that when the two bars are assembled the

depending section 8 will fit into the channel of the section 9. These two parts are bolted to the side bars by the bolt 10, as illustrated. The lower channel-bar 7 is adapted to carry the clamps 11, which support the tool-standards.

The pivot-bars which carry the supporting-wheels 12 comprise the vertically-disposed bar 13, having its lower end curved and bent at substantially right angles to the section 13, as illustrated at 14, the section 14 serving as the axle for the supporting-wheel. A box 15 is secured around the lower section of the pivot-bar, and resting on the top of this boxing is an arm which forms a part of the vertically-disposed bar 16, which is bolted to an angle-bar 17, secured to the cross-bar 5 of the main frame. The upper end of the bar 16 is bent at substantially right angles and forms a bearing for the upper end of the pivot-bar 13. A brace-rod 18 is provided for further supporting the pivot-supporting bar 16, which is secured at its lower end by means of a bolt 19 to the lower portion of the bar 16 and at its upper end to the front frame-bar 4 by means of the bolt 20.

Secured to each of the pivot-bars 13 are the rearwardly-extending arms 21, which have secured to their free ends a connecting-bar 22. This connecting-bar 22 is provided with a series of apertures 23, adjacent each of its ends, so as to allow the pivot-bars to be adjusted laterally when it is desired to widen or narrow the tread of the wheels. Pivoted about in the center of the connecting-bar 22 is a link 24, which is pivoted at its other end to a lever 25, which is in turn pivoted to a bearing-block 26, secured on the bar 6 of the gang-frame. This lever 25 is bolted to the handle-bar 27, and by moving the said handle-bar laterally the pivot-bars and their wheels may be turned in either direction for the purpose of steering and guiding the machine. For the purpose of keeping the handle-bar 27 steady a pin 28 is provided which passes through an aperture formed in the lever 25 in rear of its pivot and through a projecting lug 29, carried by the bearing-block 26. When it is desired to move the lever 27 laterally to turn the pivot-wheels, this pin 29 must of course be removed.

The shafts 30 are provided at their rear ends with the irons 31, having eyes provided in their free ends which fit between the clips 32, formed in the front corners of the main frame, and the pivot-bolts 33, carried by the

clips, pass through the eyes of the irons 31, thereby securing the shafts to the main frame. In the center of the front frame-rod 4 are the angle-irons 34, rigidly secured to the rear side of the said frame, and between these angle-irons is secured a segmental rack 35, which is supported on the bolt 36, carried by the angle-irons. This segment 35 has rigidly secured to its lower portion an arm 37, which extends forwardly and is then curved upwardly and secured to the under side of the cross-bar 38 of the shafts by means of the bolt 39, so that the said segment 35 is rigid with the shafts. Pivoted on the bolt 36 are the levers 40 and 41, which are bent at a slight angle and have their rear ends rigidly secured to the handle-bar 42. The lever 40 is provided with a spring-pawl 43 of the usual construction, which is operated by a rod 44, which extends to the rear end of the handle-bar and is provided with a pivoted operating-handle 45 of the usual construction. Pivoted to the bolt 36, adjacent the levers 40 and 41, is a brace-bar 46, which is inclined downwardly and rearwardly, and has its other end rigidly secured between the two bars 6 and 7 of the gang-frame and which serves the purpose of strengthening the main frame and making the same very rigid.

Secured to the upper bar of the gang-frame 6 is a bar 47, which extends upwardly and through a slot provided in the handle-bar 42 and is secured to the said handle-bar by means of a bolt 48, which passes through the handle-bar and through an elongated slot 49, provided in the upper portion of the bar 47. A collar or clip 50 is rigidly secured on the bar 47 some distance above its connection with the gang-frame, and interposed between this clip and the under side of the handle-bar 43 is a coiled spring 51, which exerts its tension on the gang-frame and at the same time allows or admits of the said gang-frame yielding in an upward direction in the event of the teeth coming in contact with stones or other obstructions in the ground.

In the operation of my machine it will be readily understood that by operating the lever 42 the gang-frame and its tools may be raised or lowered and held in adjusted position by means of a rack-and-pawl mechanism, and the frame may be also lifted, so that the teeth will clear the ground during transportation to and from the field. This lever 42, together with the lever 27, perform a double function—that is to say, they serve as handle-bars for the use of the operator in steadying the machine, while the handle-bar 42 serves as a lever for raising and lowering the gang, as above described, and the handle-bar 27 serves as a lever for turning the pivot-bars which carry the supporting-wheels when it is desired to guide the machine in either direction, this being accomplished by means of the connecting-bars which connect the said

lever with the pivot-bars. The lever 42 may also be used to regulate the height of the shafts to suit the horse, as the segment 35 is pivotally mounted on the bolt 36 and rigidly connected to the cross-bar of the shafts by means of the bar 37, so that after hitching up the horse the height of the front part of the shafts can be regulated by the operation of the lever 42. It will also be noted that the entire frame is supported on the pivot-bars and swings on the axle formed by the lower or horizontal portion of said pivot-bars. The construction of the frame is very simple and inexpensive to manufacture, while at the same time it possesses great strength and durability, and the entire machine is very efficient in its operation.

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

1. In an agricultural implement, the combination with a main tool-frame and a draft means hinged to the forward part of said frame, of a lever pivoted to said main frame, means for maintaining said lever in a predetermined position with respect to said draft means for adjusting the angular relation between said draft means and said tool-frame, and means connected to said lever and said tool-frame for permitting said frame and lever to yield with respect to each other.

2. In an agricultural implement, the combination with a main tool-frame, draft means hinged thereto, a lever having direct connection with the tool-frame, means connecting said draft means and said lever for fixing and for allowing adjustment of the relation between said draft means and said tool-frame, and means for allowing said tool-frame to yield in relation to said lever, said connecting means acting to vary the depth to which the tools carried by the tool-frame enter the ground.

3. In an agricultural implement, the combination with a main frame, of draft means hinged thereto, a segmental rack rigidly connected with said draft means, a lever pivoted to said frame, means to permit said frame and lever to yield with respect to each other, and means carried by said lever for engaging said rack to adjust the relation between said draft means and said frame.

4. In an agricultural implement, the combination with the main frame having a tool-gang and a plurality of tools secured to said gang, of draft means hinged to the forward part of said frame, a lever pivoted to said frame, and means for adjustably fixing angle between said draft means and said frame.

5. In an agricultural implement, the combination with a main frame, draft means hinged to the forward part of said frame, a lever pivoted to said frame, a yieldable connection between said lever and said frame, means connecting said draft means and said

lever for adjusting the angle between the same.

6. In an agricultural implement, the combination with a main frame, a tool-gang secured thereto, draft means hinged to the forward part of said frame, a lever pivoted to said frame, a yielding connection between said lever and said tool-gang, and means for adjustably fixing the angle between said draft means and said frame.

7. In an agricultural implement, the combination with a main frame, a tool-gang carried thereby, draft means hinged to said main frame, a rack rigidly connected with said draft means, a lever pivoted to said frame, means for adjustably connecting said lever and said rack and a longitudinally-yieldable bar connecting said lever and said tool-gang.

8. In an agricultural implement, a main frame comprising side bars, a front bar and rear tool-carrying bars, and an intermediate cross-bar attached to the side bars, vertically-disposed bars secured to the intermediate bar and having bearings, pivoted bars carried by said bearings and wheels carried by said pivoted bars.

9. In an agricultural implement, a main frame comprising side bars, a front bar and rear tool-carrying bars, an intermediate cross-bar, attached to said side bars, vertically-disposed bars secured to the intermediate bar, having their upper and lower ends bent at right angles to form bearings, for the wheel-pivots, vertical wheel-pivots carried by said bearings, and means connecting said wheel-pivots for changing the angles of said wheels in relation to the frame.

10. In an agricultural implement, a com-

bination with the side bars of the main frame, a tool-bar consisting of upper and lower sections of different weight, the heavier of said sections being adapted to receive the tool-clamps and the other section serving as a brace for the tool-standards.

11. In an agricultural implement, a combination with the side bars of the main frame, a tool-bar comprising upper and lower sections of different weights, tool-clamps engaging the heavier of said sections, tool-standards held in position by said clamps, the lighter of said sections being adapted to bear against said tool-standards to act as a brace therefor.

12. In an agricultural implement, the combination with the side bars of the main frame, a tool-gang comprising a lower channel-bar, said channel-bar adapted to receive the tool-clamps and a flat bar adapted to serve as a brace for the tool-standard, said channel-bar and said flat bar being fixed at their ends to the side bars.

13. In an agricultural implement, the combination of the side bars of the main frame, a tool-gang comprising a lower channel-bar having its ends bent up at angles and an upper flat bar having its ends bent down at angles and adapted to engage the bent-up ends of the channel-bar, bolts connecting the bent ends of each bar and passing through the side bars of the main frame.

In witness whereof I have hereunto set my hand this 17th day of February, A. D. 1903.

SAMUEL L. ALLEN.

Witnesses:

JOHN F. GRADY,
HORACE PETTIT.