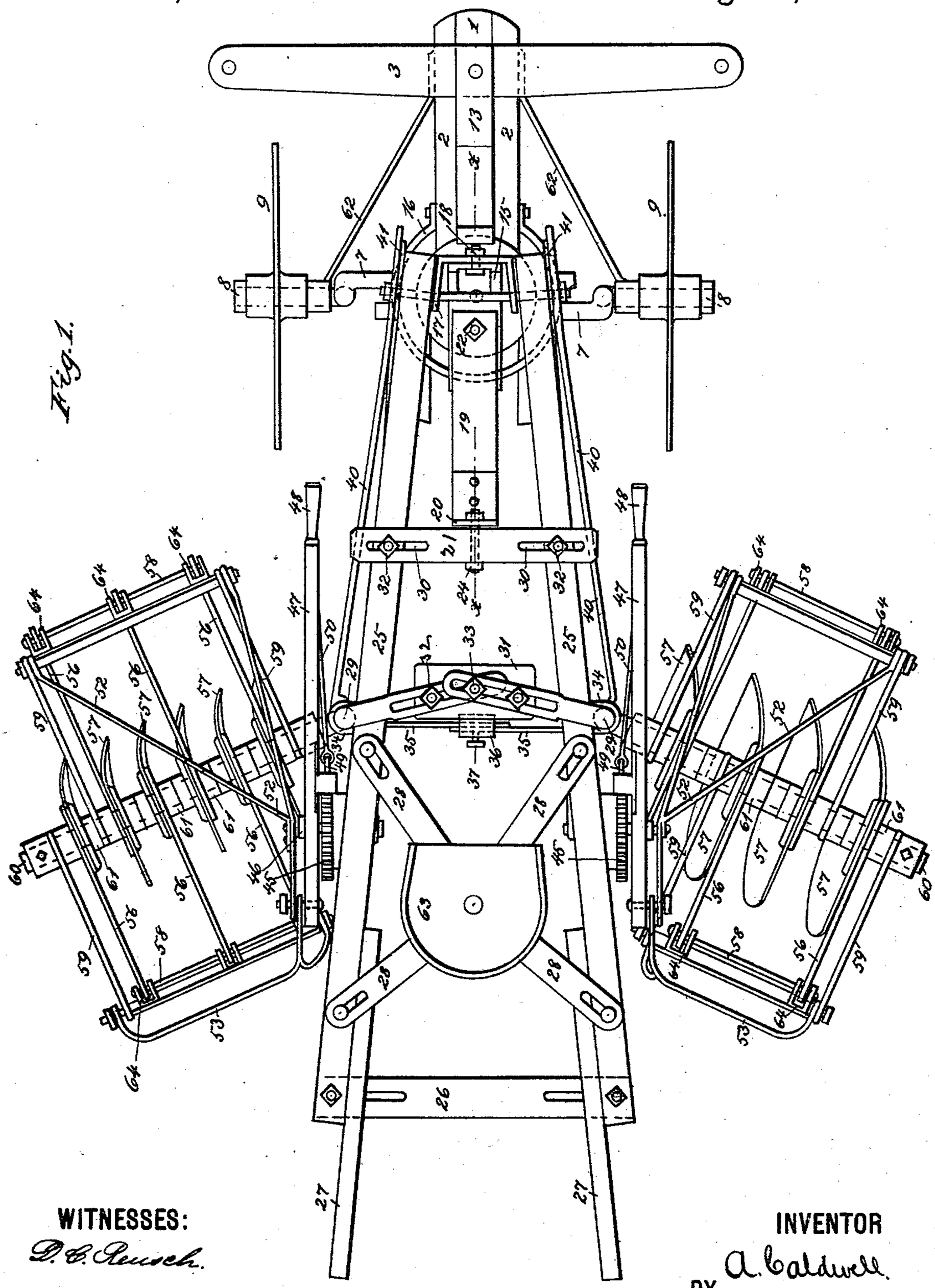
(No Model.) 3 Sheets—Sheet 1.

A. CALDWELL.

AGRICULTURAL IMPLEMENT.

No. 457,769. Patented Aug. 18, 1891.

Fig. 1.



WITNESSES:

D. C. Rensch.

Gertrude Ward.

INVENTOR

A. Caldwell.

BY A. M. Pierce.

ATTORNEY

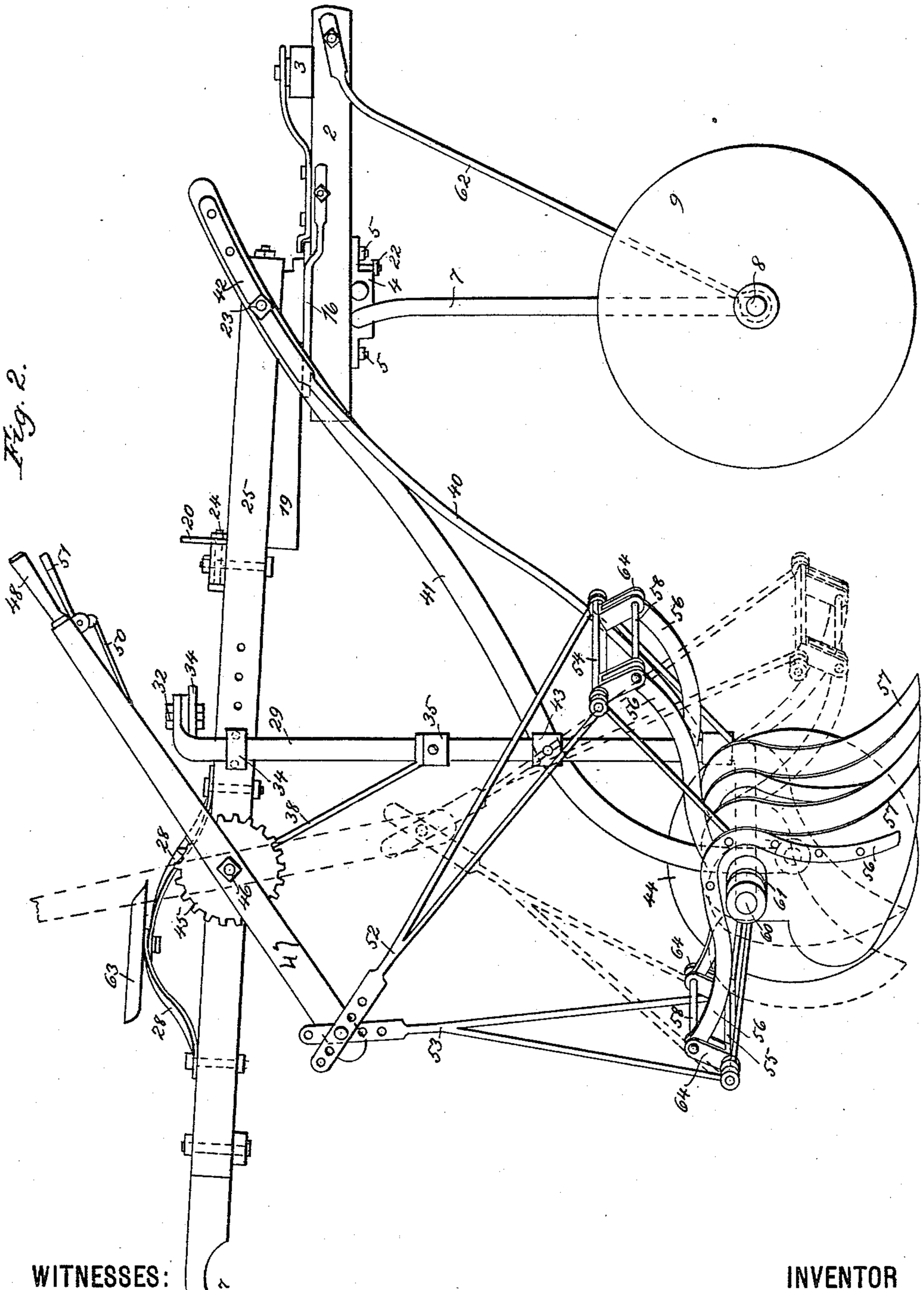
(No Model.) 3 Sheets—Sheet 2.

A. CALDWELL.

AGRICULTURAL IMPLEMENT.

No. 457,769. Patented Aug. 18, 1891.

Fig. 2.



WITNESSES:
D. C. Reusch.
Gertrude Ward.

INVENTOR
A. Caldwell.
BY A. M. Pierce.
ATTORNEY

(No Model.) 3 Sheets—Sheet 3.

A. CALDWELL.

AGRICULTURAL IMPLEMENT.

No. 457,769. Patented Aug. 18, 1891.

Fig. 3.

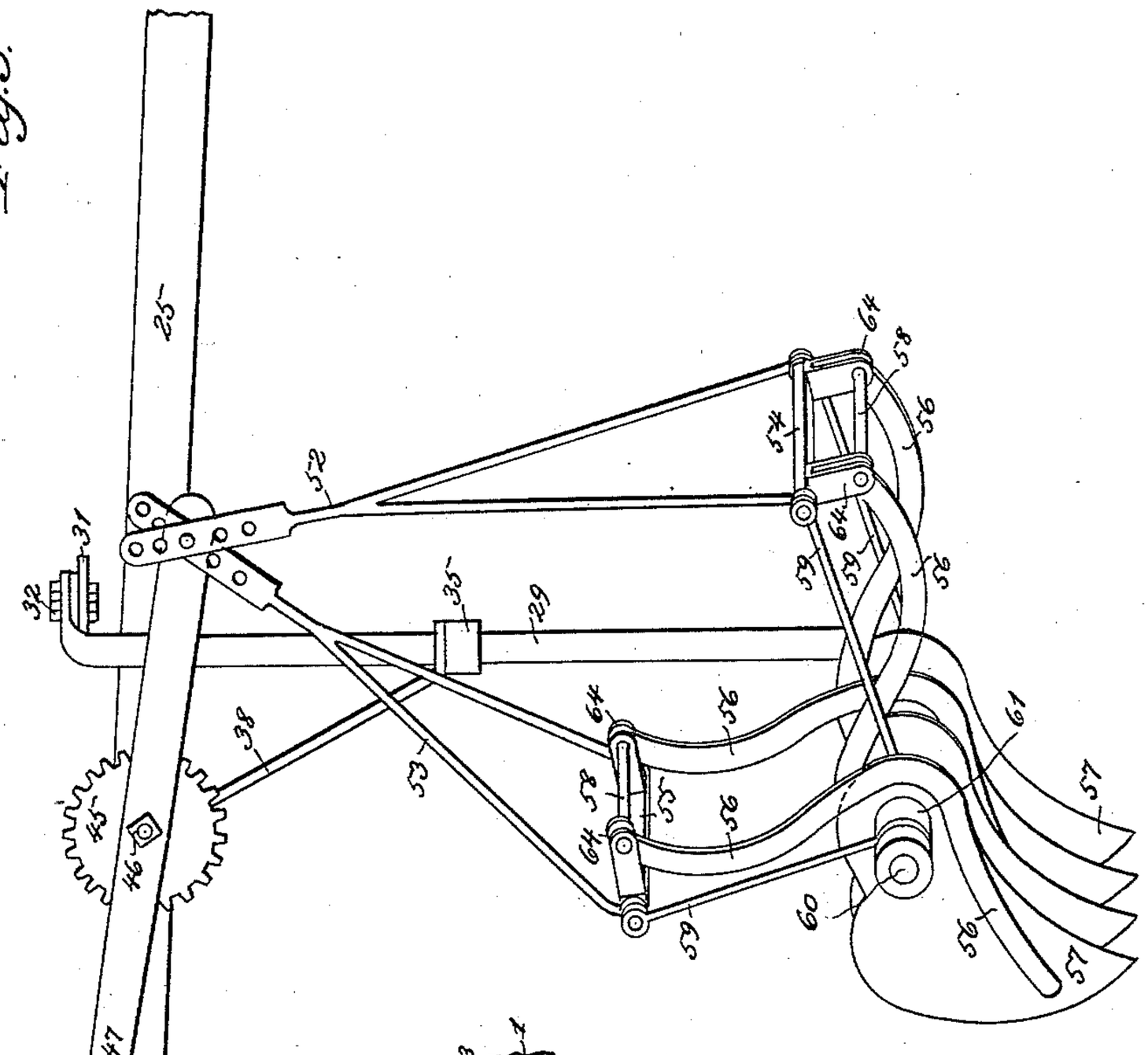
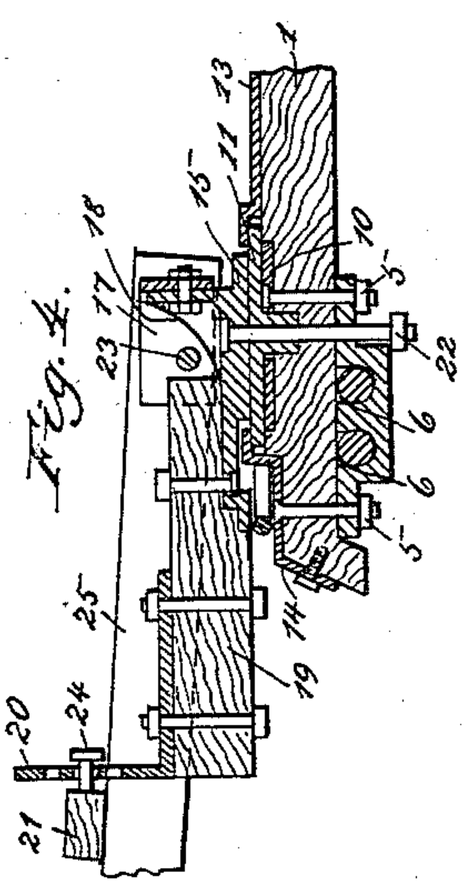


Fig. 4.



WITNESSES:

D. C. Reusch.

Gertrude Ward.

INVENTOR

A. Caldwell.

BY A. M. Pierce.

ATTORNEY

UNITED STATES PATENT OFFICE.

ALEX CALDWELL, OF ESSEX, IOWA.

AGRICULTURAL IMPLEMENT.

SPECIFICATION forming part of Letters Patent No. 457,769, dated August 18, 1891.

Application filed May 26, 1890. Serial No. 353,118. (No model.)

To all whom it may concern:

Be it known that I, ALEX CALDWELL, a citizen of the United States, residing at Essex, in the county of Page and State of Iowa, have invented a new and useful Improvement in Agricultural Implements, of which the following is a specification.

My invention relates especially to cultivators employed for cultivating side-hill listed corn, and has for its object the provision of a cultivator which will adapt itself readily to the character of the work to be performed and will operate in a very effective manner.

To attain the desired end my invention consists, essentially, in a four-wheeled tongueless cultivator, with oscillating plow and other attachments; and my invention also involves certain other novel and useful combinations or arrangements of parts and peculiarities of construction and operation, all of which will be hereinafter first fully described, and then pointed out in the claims.

In the drawings, Figure 1 is a plan view of my improved cultivator. Fig. 2 is a side elevation. Fig. 3 is a side elevation showing the plows in a raised position. Fig. 4 is a longitudinal sectional view at line *x x* of Fig. 1.

Like numerals of reference, wherever they occur, indicate corresponding parts in all the figures.

1 is a central piece of wood corresponding to the ordinary tongue and having hounds 2 2 secured thereto. 3 is the doubletree. 4 is a casting secured to part 1 by bolts 5 5. 6 6 are depressions or bearings formed in casting 4. 7 7 are bent arms forming at their lower extremities the front-wheel axes 8 8. 9 9 are the front wheels, which are disk-shaped. By thus arranging the support for the front truck the distance between the disks 9 can be very readily adjusted to suit the requirements of the work.

10 is a plate secured to the top of piece 1. 11 is a plate provided with a hub 12, which fits into a depression in plate 10. This plate acts as a turn-table, allowing free movement of the parts. The hammer-strap 13 and a back strap 14 project over plate 11. Secured to plate 11, or formed therewith, is a casting 15, which forms the pull-block or clevis-block. 16 is a bent rod forming a guide and rest. 17 is a horizontal clevis swiveled to block 15 by a bolt 18 and cross-rod 23. 22 is the king-bolt passing through blocks 17 and 4 and the plates between. 19 is a coupling secured to block 15 and bearing at its outer extremity an L-shaped iron 20 for adjustable connection to a cross-bar 21 upon the main cultivator-frame by a bolt 24. 62 are braces. By this arrangement the parts may be readily adjusted and the main frame is free to move in any direction, accommodating the cultivator to the level of the land without disturbing the front truck.

25 25 are the side beams of the main frame pivoted at the front upon rod 23 and connected together by adjustable cross-bars 21 and 26. 27 27 are handles secured to bars 25. 63 is a seat connected to the side bars by means of springs 28 28. 29 29 are the plow or disk shaft standards having slots 30 in their upper horizontal portions. 31 is a horizontal plate to which said horizontal portions are adjustably secured by bolts 32 32 and 33. 34 34 are eyes or staples made longitudinally adjustable in the bars 25 and encircling the vertical portions of the plow or disk shaft standards. 35 35 are horizontal arms extending inwardly from standards 29 through a clamp 36, having a set-screw 37 therein, which permits the adjusting of the width of the main frame while acting as a cross-brace. 38 is a diagonal brace extending upward and backward from each standard 29. 40 40 are adjustable braces extending forward and upward. 41 41 are adjustable beams secured to the front portion of the main frame at 42, passing through an adjustable block 43 upon each vertical standard 29 and carrying a supporting disk and shield 44 at the inner lower extremity. By this arrangement the plow or cultivator shafts are made adjustable toward or from each other, while at the same time they are firmly braced in all directions. The supporting disks and shields beneath the main frame are rigidly held at any desired point, and at the same time they may be so adjusted vertically as to regulate the depth cultivated.

On each side of the main frame are secured ratchet-disks 45, and outside of each

of these disks, upon a bolt 46, is pivoted a swinging lever 47, having an operating-handle 48. 49 is a bolt pivoted upon the lever and normally held in engagement with the ratchet-disk. 50 is a rod passing from bolt 49 to a manipulating hand-piece 51. To the lower end of lever 47 are adjustably pivoted forked rods 52 and 53. The fork of rod 52 engages with a cross-bar 54 and of rod 53 with a cross-bar 55, each of said cross-bars bearing clevises 64, wherewith the plow-beams engage, said clevises being made adjustable in the cross-bars. By this arrangement the weight is equalized on the lever, for when one set of plows pulls down upon a forked rod the other set is pushed upward. One set of plows may be in the ground, or both or all of the plows may be raised to dump any trash which may lodge. The plows are illustrated as all lowered in the full lines in Fig. 2, and one set is shown as raised in the dotted lines in said figure. In Fig. 3 the plows are shown as all raised.

The plow beam and standard 56 is formed in one piece of metal, and the mold-board or share 57 is secured directly thereto, making a very simple, compact, and effective arrangement. At the outer extremity of the plow-beam is a perforation through which a rod 58 passes, engaging with the clevises attached to bars 55. In ordinary ground this rod is made of metal, but in stony ground or where there are stumps these rods may be of wood. 59 are brace-rods passing from the cross-bars 55 to the plow or disk shaft 60, which is a continuation of standard 29. 61 is a hub secured to each mold-board or cutter, and through which the disk-shaft 60 passes. This construction gives great rigidity and stiffness to the plows.

The cutting capacity of the plows is regulated by giving them the requisite angle, and they can be made to cut from one inch to the full size of the plows. By the peculiar arrangement of the levers and connections to the plow-beams the plows can be run on their points for harrowing, as both sides of the plows are sharp. The plows may be removed from the shaft and disks or small teeth substituted, if desired, thus making the implement a combined plow, harrow, cultivator, and disk pulverizer. The blades or plows may be reversed in order to throw the earth away from or toward the grain, as desired.

Having now fully described my invention, what I claim as new therein, and desire to secure by Letters Patent, is—

1. In a cultivator, the combination, with the bar 1, mounted upon the front arch, of the plate 10, secured thereto, the plate 11, mounted thereabove and embraced by the hammer-bar 13, and a back bar 14, and bearing a pull-block 15, the horizontal clevis pivoted to said pull-block, and the connections to the main frame of the cultivator, substantially as shown and described.

2. In a cultivator, the combination, with the pull-block 15, mounted upon the front truck, and the main cultivator-frame, of the horizontal clevis 17, pivoted to the pull-bar, and the coupling 19, secured to the pull-block and bearing an adjustable L-shaped extension 20, substantially as shown and described.

3. The combination, with the forward truck and its adjustable supporting-disks, of the main cultivator-frame connected to the forward truck, as set forth, and the adjustable supporting-disks and guards having their beams adjustably connected to the vertical plow-shaft standards and to the forward end of the main cultivator-frame, substantially as shown and described.

4. The combination, with the main cultivator-frame, of the plow-shaft standards adjustably connected to a uniting-plate at their upper extremities and by cross-arms beneath the main frame, and the braces passing from said standards backward to the main frame, the braces passing forward to the main frame, and the adjustable disk-beams secured to the forward end of the main frame, and clamps upon the vertical standards, substantially as shown and described.

5. The combination, with the main frame, of the adjustable supporting-disks and guards, the beams of said guards being adjustably connected to the main frame and also adjustably connected to the vertical standards by clamps, substantially as shown and described.

6. In a cultivator, a lever pivoted at the side of the main frame and provided with means for securing it at any desired angle, in combination with two sets of plows or cultivator-blades mounted upon a common shaft and having their beams extending in opposite directions and engaging with cross-bars connected to forked rods adjustably connected to the operating-lever, substantially as shown and described.

7. In a cultivator, the combination, with the horizontal supporting-shaft, of the plows, each consisting of a mold-board provided with a hub through which said shaft passes, and a beam and standard formed in one piece, being secured to the mold-board and connected to the manipulating-lever by adjustable connecting-rods, substantially as shown and described.

ALEX CALDWELL.

Witnesses:
M. F. MATHEWS,
THOMAS J. RICE.