

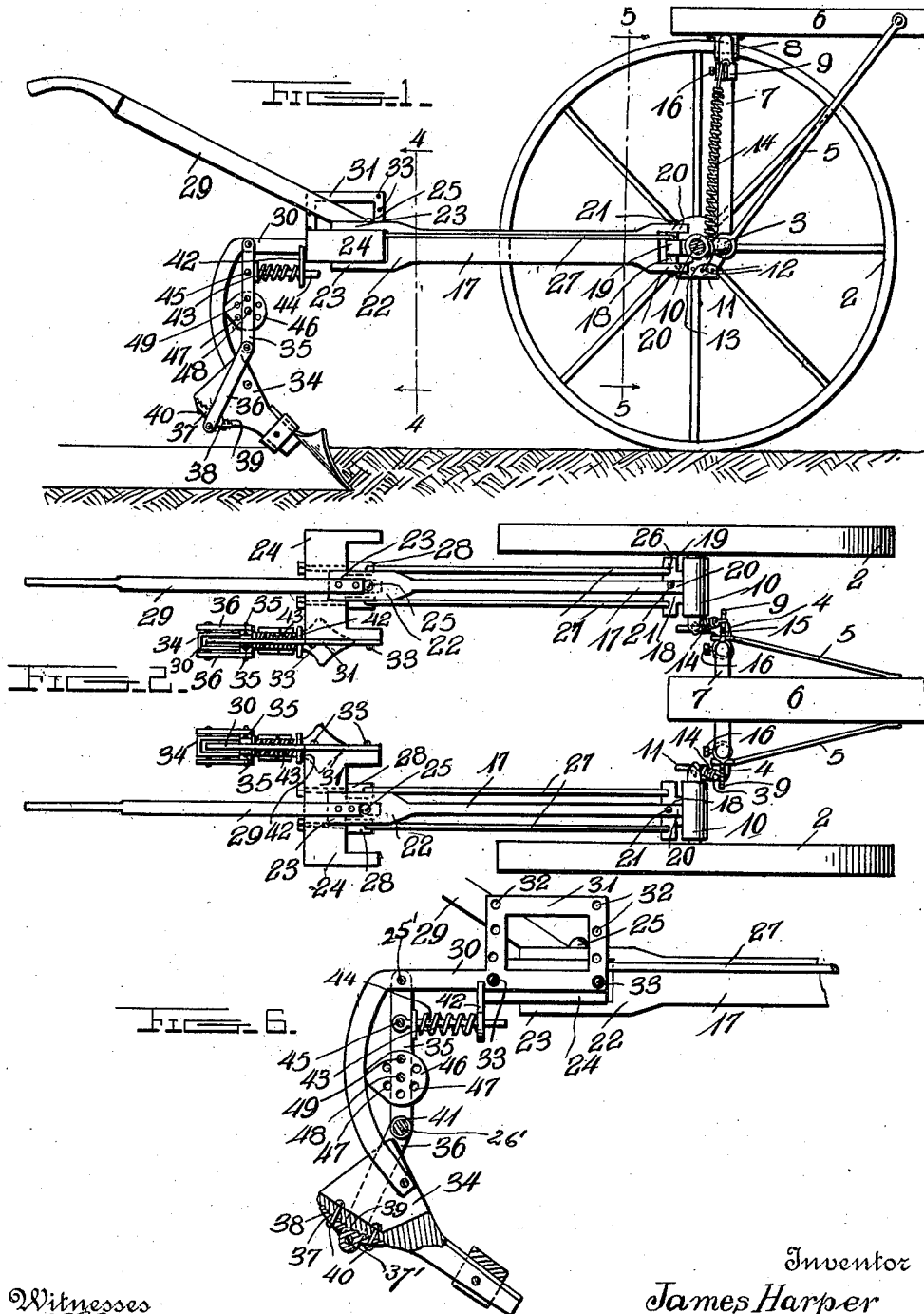
J. HARPER.
CULTIVATOR.

APPLICATION FILED AUG. 9, 1909.

Patented June 27, 1911.

2 SHEETS-SHEET 1.

996,240.



Witnesses
Chas. H. Griesbauer
C. H. Griesbauer.

Inventor
James Harper

by *A. B. Wilson & Co.*
Attorneys

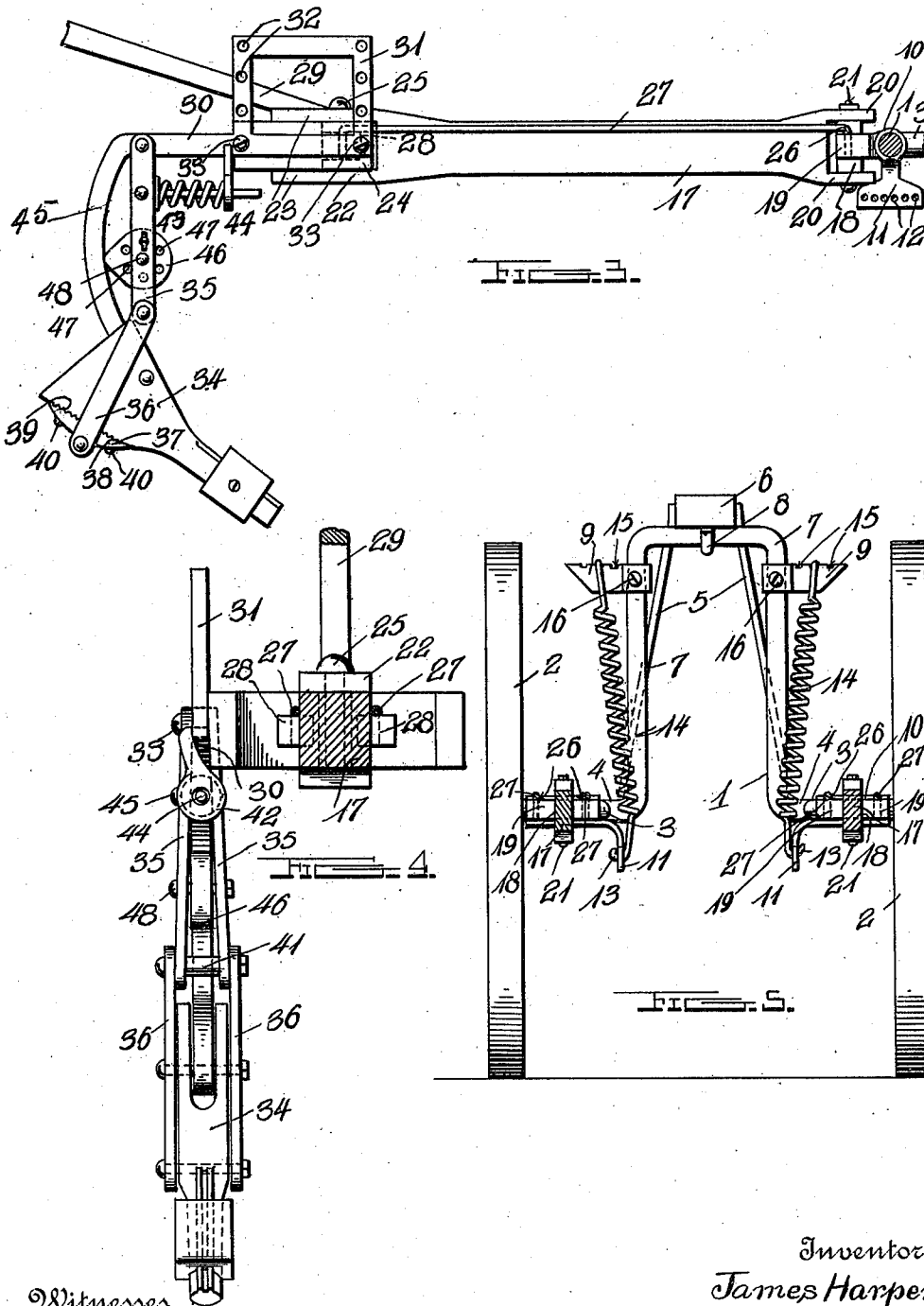
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E. H. Grieshaber
C. H. Grieshaber

Inventor
James Harper
by *A. B. Wilson & Co.*
Attorneys

UNITED STATES PATENT OFFICE.

JAMES HARPER, OF OZARK, MISSOURI.

CULTIVATOR.

996,240.

Specification of Letters Patent. Patented June 27, 1911.

Application filed August 9, 1909. Serial No. 511,948.

To all whom it may concern:

Be it known that I, JAMES HARPER, a citizen of the United States, residing at Ozark, in the county of Christian and State of Missouri, have invented certain new and useful Improvements in Cultivators; and I do declare the following to be 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.

This invention relates to cultivators and it consists in the construction and arrangement of parts, as will be hereinafter described and particularly pointed out in the claim.

In the drawings, Figure 1 is a side elevation of the cultivator; Fig. 2 is a top plan view; Fig. 3 is a central longitudinal sectional view; Fig. 4 is a detail vertical transverse sectional view on the line 4—4 of Fig. 1; Fig. 5 is a detail vertical transverse sectional view on the line 5—5 of Fig. 1; Fig. 6 is a detail elevation, partly in section, of one of the plow standards.

Referring more especially to the drawings, 1 represents the axle of the vehicle upon which are mounted the usual supporting wheels 2. In this instance, the axle is bent forwardly in a horizontal direction, as at 3, and then inwardly at right angles to the bend 3, as at 4, to provide an extension parallel with the portion upon which the wheels are mounted, so as to accommodate the brace rods 5 which are connected to the tongue 6. From the extension 4, the axle is bowed, as at 7, so as to connect with the rear end of the tongue, as at 8, and to provide supporting standards for the adjusting arms 9. Sleeved on the axle 1, between each wheel and the lateral bends 3, is a bearing member 10, which has connected to it the depending adjusting arm 11 provided with apertures 12 adapted to receive the hooked end 13 of the operating spring 14. This operating spring is bridged between the arm 11 and the arm 9 and the latter arm is notched, as shown at 15, to permit of its proper connection therewith, with respect to its connection with the arm 11. The arms 9 are held upon the standards by suitable set screws 16 so that they may be vertically adjusted thereon to increase or decrease the tension of the springs 14, whereby the force exerted to raise or lower the plows may be increased or decreased.

From the illustration, it will be seen that the springs 14 may be connected to either the forward or the rear ends of the arms 11. When in the first mentioned position, the plow beams 17 are raised by the springs and when in the latter position are depressed by the springs so that the plow points are thrown into engagement with the ground.

Each sleeved bearing is provided with a vertical bearing 18 which has lateral arms 19 extending therefrom alongside of the sleeved bearing. The vertical bearings 18 are placed between the upper and lower legs of the bifurcated end 20 of the beams 17 and are held in such position by the bearing bolts or pins 21. The rear ends of the beams are also bifurcated, as at 22, to form straddle legs 23 which engage on opposite sides of the standard supports 24 and are pivotally connected to said supports by the bolts or pins 25. This permits the supports to swing laterally upon the beams and the sleeved bearings 10 to also swing laterally relative to the beams. In order to secure a parallel motion, the arms 19 are apertured at 26 to receive the parallel connecting rods 27 which extend on either side of the beams 17 and are connected to the apertured adjusting bolts 28 which extend through the supports 24 and are adjustable by means of the nuts 28^a so as to take up any slack in the rods 27.

An inspection of the top plan view, will show that any movement of the rear end of the beams 17 will cause the front ends to pivot on the bearings 18 and the supports to pivot upon the rear ends of the beams and maintain their parallel relation with the line of draft. To each beam there is secured a suitable handle 29 by which the operator may throw the supports and the plows attached thereto to the required position for dodging the plants.

Secured to each support 24 is a plow standard 30 which has at its upper forward end a rectangular adjusting frame 31 with apertures 32 in its vertical side members adapted to be engaged by the adjusting screws 33 which pass through the frame and take into the supports 24. The standards are bent down, as is usual, and have pivoted to their lower ends the slotted plow feet 34 which are adapted to be normally held in operative position by mechanism which will now be described.

Pivoted at 25' to the upper portion of the standards are two depending link arms 35

which have pivoted to their lower ends at 26' similar link arms 36 which in turn are pivoted at 37' to the adjusting block 37 which is notched on its inner side, as at 38, to engage similar serrations 39 on the underside of the plow feet 34. These adjusting blocks have bolts 40 passing through them and through slots in the feet so that they may be held in their proper adjusted position with the link arms 36 engaged with their said pivots on opposite sides of each foot. The link arms 35 and 36 are separated at their connecting points by a tubular sleeve 41 and form in substance a toggle lever which when under ordinary tension, as will hereinafter be described, is substantially straight. In order to adjust the action of these toggle levers and to hold them in normal position, I provide a depending bracket 42 which forms a stop and guide way for a spiral spring 43 wound on a guiding rod 44 which latter is pivotally connected at one end between the links 35 upon a bolt 45. This spring 43 normally exerts its pressure to straighten out the toggle lever and in order to prevent too much of an inward movement and to adjust the same whereby the foot may be operated with a greater or less pressure exerted thereon, I provide an eccentric 46 provided with a plurality of holes 47. This eccentric is pivoted between the links 35 by a bolt 48 and is adapted to rotate and bring its low or high faces into engagement with the standard 30. In order to hold the eccentric in adjusted position, I form holes 49 in the links 35 to register with the apertures 47 in the eccentric and pass through the holes and apertures a cotter pin or suitable locking device which extends from link to link.

It will be seen from the foregoing description and illustration of the drawings, that the plows are maintained in parallelism with the line of draft at all times no

matter what their lateral adjustment may be. With this feature, the dirt is thrown on both sides of the plows evenly, where bull-tongue and middle-burster points are used. Where turning plows with mold-board and land-side, are used, the dirt is thrown evenly at all times and lateral adjustment does not cause any diagonal positioning of the land-side which would tend to sheer the plows inwardly toward one another.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Having thus described my invention, what I claim is—

A cultivator comprising a running gear with an axle bent in horizontal and vertical portions, the horizontal portions having bearings sleeved thereon provided with depending apertured adjusting arms, each sleeve bearing being provided with a vertical bearing having lateral arms projecting therefrom and arranged adjacent to the sides of said sleeve bearings, beams having bifurcated front ends having the vertical bearings pivoted thereto, adjustable horizontal arms on the vertical portions of the axle having a plurality of notches therein, springs having hooks on opposite ends so as to adjustably engage said notches and said apertured arms of the bearing sleeves, and the rear ends of said beams being also bifurcated and having standard supports pivotally connected thereto.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JAMES HARPER.

Witnesses:

THOMAS C. CRAIN,
D. W. BINGHAM.