

(No Model.)

3 Sheets—Sheet 1.

A. E. MOREY.
WHEEL CULTIVATOR.

No. 479,913.

Patented Aug. 2, 1892.

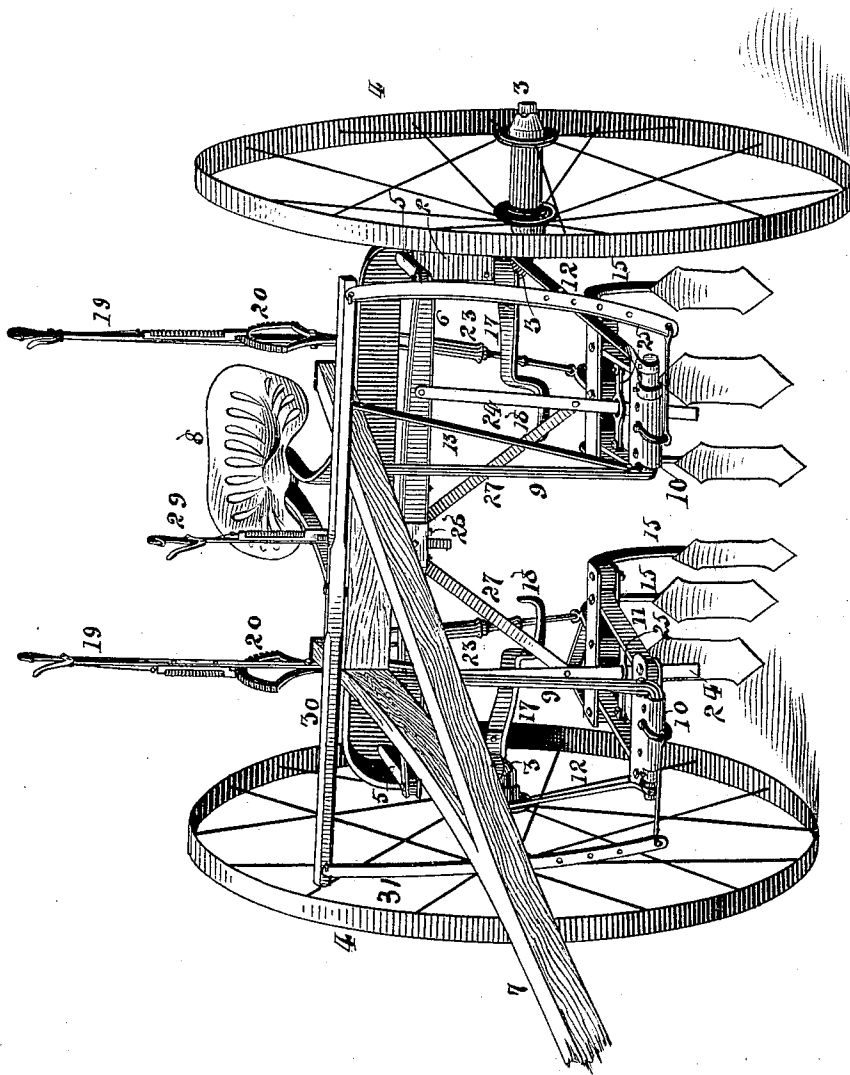


Fig. 1.

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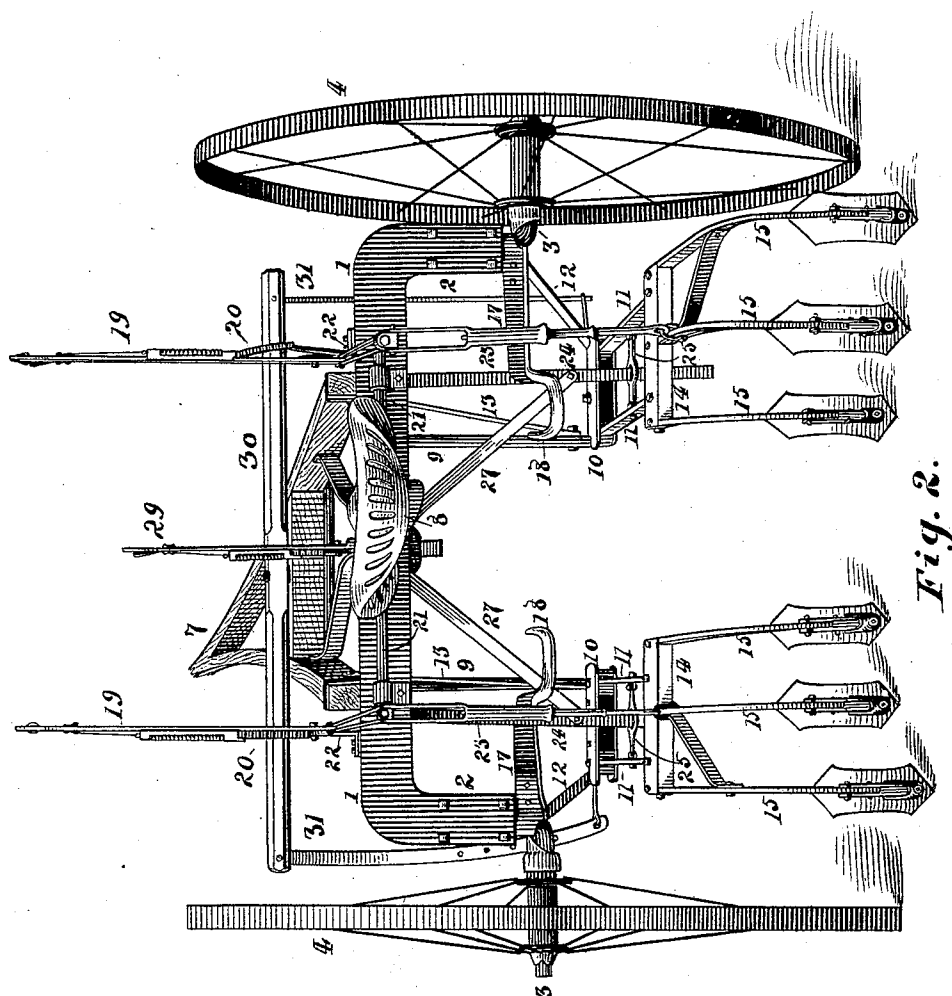


Fig. 2.

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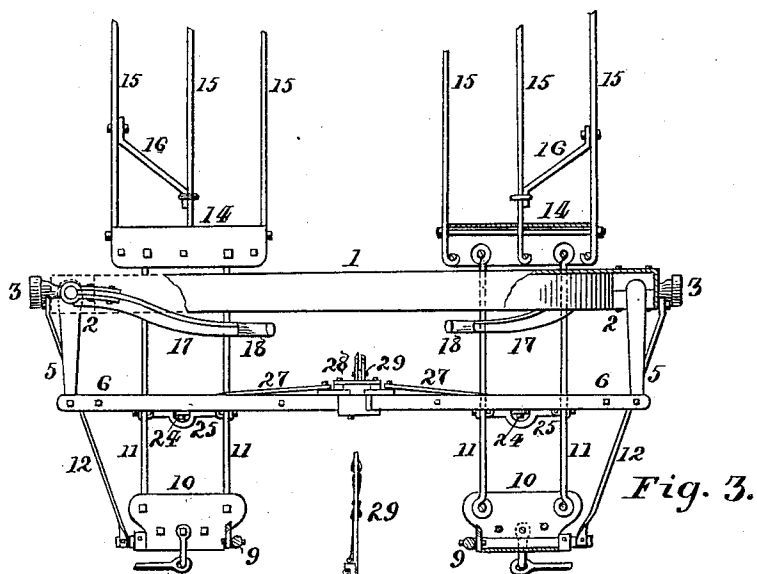


Fig. 3.

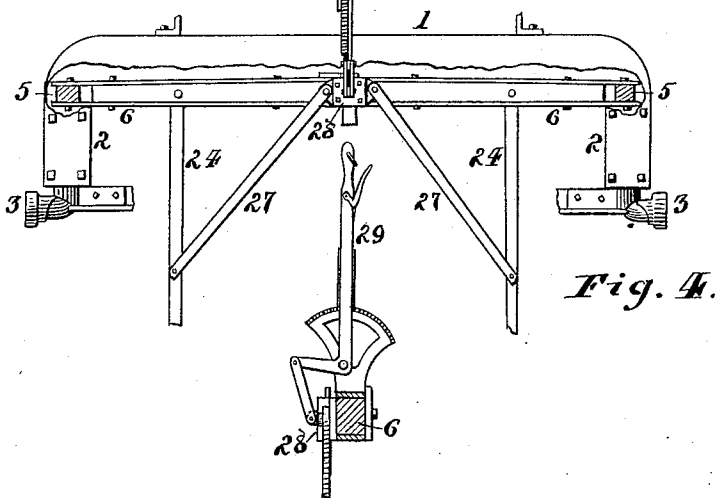


Fig. 4.

Fig. 5.

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UNITED STATES PATENT OFFICE.

ALBERT E. MOREY, OF AKRON, OHIO, ASSIGNOR TO THE AKRON TOOL COMPANY, OF SAME PLACE.

WHEEL-CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 479,913, dated August 2, 1892.

Application filed December 14, 1891. Serial No. 414,962. (No model.)

To all whom it may concern:

Be it known that I, ALBERT E. MOREY, a citizen of the United States, residing at Akron, in the county of Summit and State of Ohio, have invented a certain new and useful Improvement in Wheel-Cultivators, of which the following is a specification.

My invention has relation to improvements in that class of wheel-cultivators in which the wheels of the carriage are journaled on short or partial axles pivotally connected with the sustaining-carriage and technically known as "pivot" axles, and arranged to swing so as to bring the planes of the wheels at an angle with the line of draft and to simultaneously swing the groups of cultivator-blades, technically known as the "gangs," to accommodate them to the changed course of the vehicle.

The objects of my invention are to furnish devices by which the gangs may swing so as to constantly move in parallel lines irrespective of the line of draft of the vehicle; to provide new and improved mechanism for operating the several parts; to cause the gangs to approach and recede from each other at will; to improve the mechanism for raising the gangs, and generally to simplify the construction of the machine and reduce the number of parts.

To the aforesaid objects my invention consists in the peculiar and novel construction, arrangement, and combination of parts hereinafter described, and then specifically pointed out in the claims, reference being had to the accompanying drawings, which constitute a part of this specification.

In the accompanying drawings, in which similar reference-numerals indicate like parts in the different figures, Figure 1 is a perspective view of my improved wheel-cultivator, looking from its left front; Fig. 2, a like view, looking from its left rear and from a point in the plane of the left wheel; Fig. 3, a plan of the operative parts of the carriage, portions being in section to avoid confusion of lines; Fig. 4, a rear view of the arch, connecting-rod, and certain of the operative parts, portions of the arch and mechanism being cut away to expose the other parts more clearly; and Fig. 5, a side elevation of the lever and connecting mechanism for causing the gangs to approach and recede.

Referring to the drawings, 1 is the cross-beam of the carriage, preferably constructed in form of an arch of metal plate or light casting, bearing in the dependent ends boxes 2, in which are journaled the vertical parts of the pivotal axles, hereinafter described, retained by bolts, as shown. Each of these pivotal axles consists, preferably, of a single piece of metal having a journal 3 for the wheel 4, (omitted in Figs. 3 and 4,) thence is bent upward, forming a journal to be mounted in the boxes 2, and thence bent horizontally at right angles with each of the other parts to constitute levers 5, which are connected by a cross-bar 6, by which they are compelled to swing in unison.

Attached to the cross-beam 1 is a split or bifurcated tongue 7, back of and supported from which is the seat 8 for the operator. Depending vertically from the bifurcated pole 7 are two ends of a rod 9, the intermediate part being bent between and supported by said pole, their lower ends being turned horizontally to constitute journals for the front trees 10 of the gang draft-bars 11, which bars and trees are sustained from lateral and backward motion by sets of braces 12 13, the bars 11 being pivotally connected with the trees 10. The other ends of the gang draft-bars 11 are pivotally connected with the gang-trees 14, to which are rigidly attached the gang-bars 15, each bearing its separate cultivator-blade, the outer longer bars being supported by diagonal braces 16.

Attached to each pivotal axle at the base of the vertical portion hereinbefore referred to is a lever 17, terminating in a treadle 18, within reach of and to be operated by the occupant of the seat 8, by means of which the pivotal axles are rocked and the planes of the wheels thrown simultaneously out of the line of the draft of the vehicle. Pivotally mounted on the cross-beam 1 on opposite sides of the seat 8 are levers 19, provided with rocking latches to engage segmental racks 20, and arranged when rocked backward instead of forward, as the levers in ordinary use for the purpose are arranged to go, to raise the gang by means of the rock-shaft 21, link 22, and adjustable connecting-rod 23. This device is advantageous, as the strain of the operator is backward against the thrust of

his feet. Pivotally suspended to the cross-beam 6 are bars 24, which pass freely through central orifices in links 25, pivotally connected with the gang draft-bars about midway between the trees 10 and 14, so as to form a central brace to regulate the lateral action of the gangs and to control them as the wheels are swung. Extending from near the lower connections of each bar 25 are braces 27, which are hinged to a yoke 28, connected with and arranged to be raised and lowered by the bell-crank lever 29, which is mounted on the cross-bar 6. It will be apparent that by swinging back the lever 29 the gangs will be drawn toward each other and by swinging it upward they will be separated.

The evener 30, with the draw-bars 31, provided with holes in which to connect the clevis of the whiffletrees, is not new, and this I do not claim.

From the foregoing description of my improved cultivator it will be readily seen that as the pivotal axles are turned by the levers 17 the cross-bar 6 by means of the bars 24 simultaneously swings the bars 11 to the one or other side with a parallel movement, carrying the trees 14, the gangs of which at all times travel in parallel lines, the several blades of each gang always retaining the same relative position toward and distance from each other, the trees 14, with their gangs, being constantly parallel with the cross-beam 1.

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

1. In a wheel-cultivator, the combination, with pivotal axles and means for rocking them, of cultivator-gangs arranged to be simultaneously rocked by intermediate mechanism connected with said axles, the blades of each gang being arranged to maintain when swung in either direction the same relative position to the axial line of said vehicle, substantially as shown and described.

2. In a wheel-cultivator, the combination, with a cross-beam mounted on pivotal axles and means for rocking said axles, of sets of gangs arranged to be rocked laterally by said axles through intermediate connecting mechanism, the blades of each gang being arranged to maintain the same relative distance from each other with reference to a line at right angles with the axial line of said vehicle, substantially as shown and described.

3. In a wheel-cultivator, the combination,

with the cross-beam mounted on pivotal axles and means for rocking said axles, of two sets of gangs arranged to be rocked laterally by mechanism connected with said axles, the separate blades of each gang being arranged to constantly maintain the same relative position to the axial line of the vehicle and the same distance from each other with reference to a line at right angles to said axial line, and means for causing said gangs to approach and recede from each other, substantially as shown and described.

4. In a wheel-cultivator, the combination, with the supporting-frame and the pivotal axles having lever-arms connected by a cross-bar, of two fixed trees rigidly attached to said frame, and two movable trees severally united with the fixed trees by parallel bars, and cultivator-blades attached directly to said movable trees, substantially as shown and described.

5. In a wheel-cultivator, the frame and the pivotal axles journaled therein, having lever-arms united by a cross-bar, and means for rocking said axles, combined with the fixed and movable trees severally united by parallel draft-bars, and cultivator-blades attached to said movable trees, and intermediate mechanism for causing said movable trees to rock in unison with said axles, substantially as shown and described.

6. The pivotal axles having lever-arms, and the cross-bar uniting said arms, and the fixed and movable trees, and the parallel draft-bars severally uniting said fixed and movable trees, combined with depending rods attached to said cross-bar and passing through links pivotally connected between pairs of said draft-bars, substantially as shown and described.

7. In a cultivator of the class designated, the combination, with the fixed trees, the draft-bars, the movable trees, and the pivoted links interposed between said draft-bars, of the depending rods passing through said draft-bars and the diagonal links connected with said depending bar and united in a yoke arranged to be raised and lowered by a lever, substantially as shown, and for the purpose specified.

In testimony that I claim the above I hereunto set my hand.

ALBERT E. MOREY.

In presence of—

C. E. HUMPHREY,
C. P. HUMPHREY.