C. R. HARTMAN.

CULTIVATORS.

No. 183,301. Patented Oct. 17, 1876.

Fig. 1.

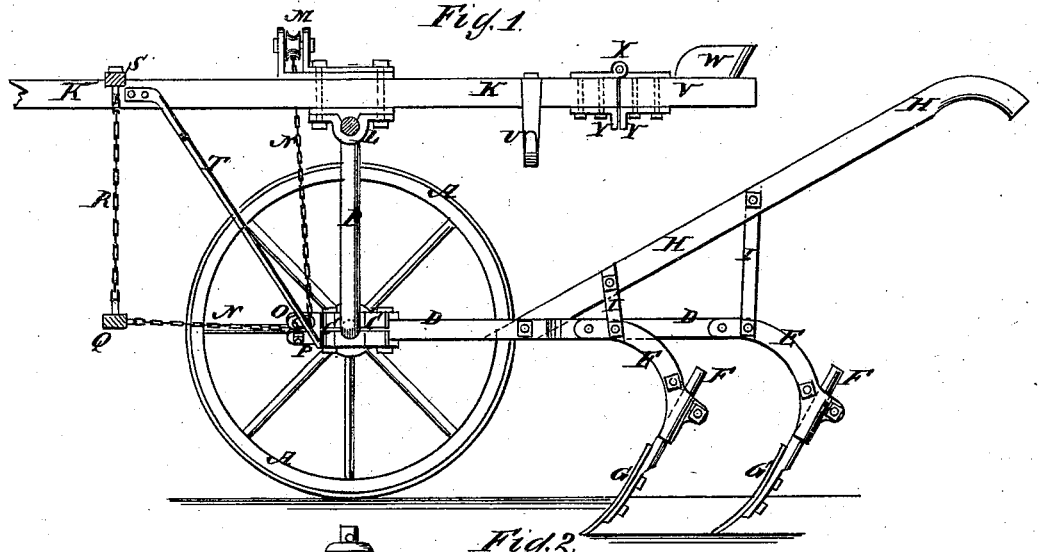


Fig. 2.

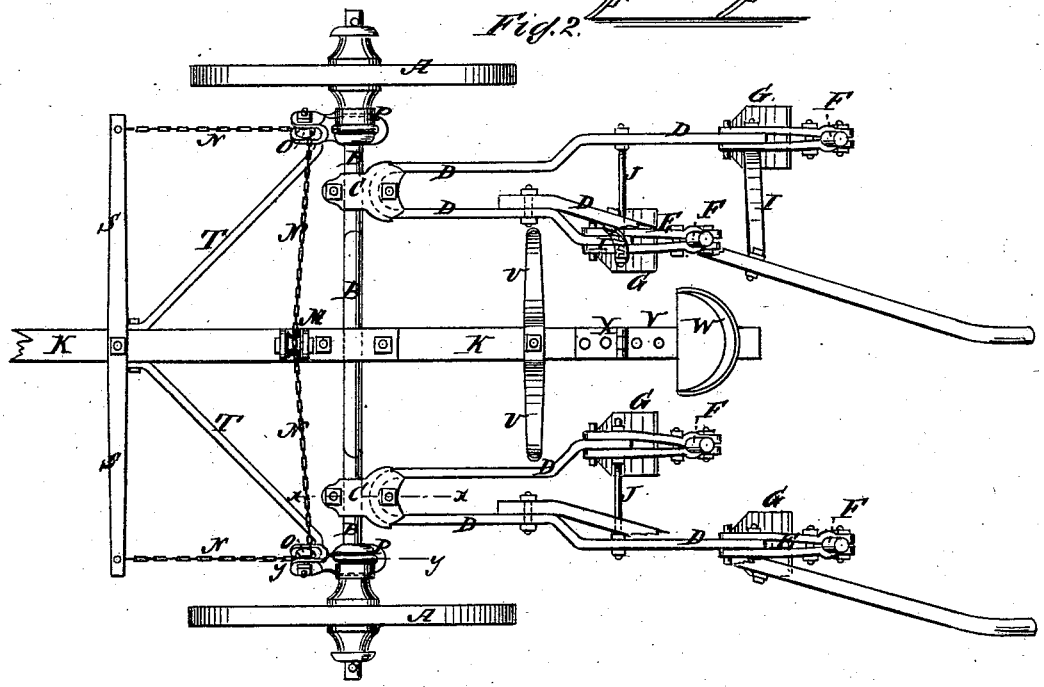


Fig. 3.

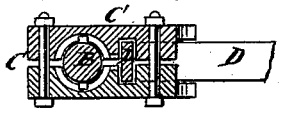


Fig. 4.

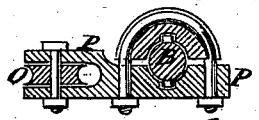
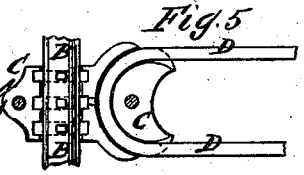


Fig. 5.



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UNITED STATES PATENT OFFICE.

CHARLES R. HARTMAN, OF ALLISON, ILLINOIS.

IMPROVEMENT IN CULTIVATORS.

Specification forming part of Letters Patent No. **183,301**, dated October 17, 1876; application filed June 26, 1876.

To all whom it may concern:

Be it known that I, CHARLES R. HARTMAN, of Allison, Lawrence county, State of Illinois, have invented a new and Improved Cultivator, of which the following is a specification:

In the accompanying drawing, Figure 1 is a vertical longitudinal section of my improved cultivator. Fig. 2 is a top view of the same. Fig. 3 is a detail section of the coupling for the plow-beams, taken through the line X X, Fig. 2. Fig. 4 is a detail section of the coupling for the draft-chain, taken through the line Y Y, Fig. 3; and Fig. 5 represents the beam-coupling with the top plate removed.

The object of this invention is to furnish an improved cultivator, simple in construction, easily guided and controlled, which may be used for cultivating tall plants, will not be broken by the plows striking an obstruction, and will not be turned to one or the other side by one or the other horse getting a little in advance.

The invention will first be described in connection with drawing, and then pointed out in the claims.

In the drawing, A represents the wheels, which revolve upon the journals of the axle B. The axle B is bent four times at right angles, to form an arch in its middle part, to pass over tall plants without injuring them. To the end horizontal parts of the axle B, near its angles, are attached the couplings C, for connecting the plow-beams with said axle. The coupling C consists of two plates or blocks having half-round notches formed across the inner sides of their forward ends, to receive and fit upon the axle B. In the inner sides of the rear ends of the blocks or plates of the couplings C are formed semicircular or half-ring grooves, to receive the U or bend of the plow-beams.

By this construction the plows may have a free lateral and vertical movement, to enable them to be readily guided. The couplings C are kept from sliding longitudinally upon the axle B by pins attached to said axle, and which enter and work in grooves in the said coupling, as shown in Figs. 3 and 5.

If desired, the inner sides of the rear ends of the blocks or plates of the couplings C may be recessed, and may have pulleys placed within them for the bends of the beams to bear against. In this case studs should be formed upon the inner surfaces of the said ends, to serve as pivots for the said pulleys, which studs should be made hollow for the passage of the clamping-bolt.

The blocks or plates C are secured to each other and to the axle and plow-beam by two bolts passing through their end parts. D represents the plow-beams, each pair of which is made in one piece, bent in its middle part into U shape, to adapt it to receive the coupling C. The outer one of each pair of beams is made longer than the inner one, and they both have an outward offset to bring them to the proper distance apart. To the rear end of each beam D, upon its opposite sides, are pivoted the upper parts of two bars, E, the upper ends of which are connected with the said beam by a wooden pin of such a size as to support the draft-strain under ordinary circumstances, but which, should the plow strike an obstruction, will break, and allow the bars E and the plows connected with them to pass over any obstruction that the axle B can pass over. The bars E are curved downward, and have half-round grooves formed in them to receive the rod or tube F, which is clamped between them by two bolts. To the lower ends of the rods or tubes F are bolted the plows G.

By this construction the plows can be raised and lowered to adjust them to work at any desired depth in the ground.

H represents the handles, the forward ends of which are bolted to the beams D, and which are supported by braces I, also attached to the said beams D. The handles H are made with a sideward inclination, so that they may be held by a plowman while walking at the side of the row being cultivated.

J represents bolts or rods, which pass through the rear parts of the beams D, and have screw-threads upon both ends to receive nuts, two to each end, which are screwed upon them upon the outer and inner sides of the said beams D, so that the distance apart of the plows may be adjusted by adjusting the said nuts upon the said rods. K is the tongue, which is connected with the middle part of the axle B by the coupling L. The coupling L is

made in two parts, which are bolted to each other and to the tongue K, and have notches formed in their inner surfaces to receive the axle B. The coupling L is kept from turning upon the axle B by pins attached to said axle, and which enter recesses in the said coupling. To the upper or lower side of the tongue K is pivoted a pulley, M, around which passes a chain, N, which also passes around pulleys O, pivoted to the couplings P, which are secured to the axle B at the inner ends of the wheels A by bolts or staples. The couplings P are made in two parts, which have notches formed in their inner sides to receive the axle B, and are kept from turning upon said axle by pins attached to the axle, and which enter recesses or holes in the couplings. The forward ends of the parts of the couplings are recessed to receive the pulleys O, and are slightly twisted to bring the said pulleys O into proper position to receive the chain N. To the ends of the chain N are attached single-trees Q, which are kept from dropping down so as to come in contact with the plants by being attached to the lower ends of the chains R. The upper ends of the chains R are attached to the ends of a cross-bar, S, the center of which is attached to the tongue K. The tongue K is strengthened by the braces T, the upper ends of which are attached to the said tongue, and the lower ends are attached to the couplings P. To the rear part of the tongue K are attached hooks U, to receive and support the plows when turning, and when passing from place to place. V is a bar, to which the driver's seat W is attached, and which is hinged to the tongue K by a hinge, X, attached to the upper side of the said tongue and bar. By this construction, when the machine is to be used as a riding-cultivator, the bar V is turned down into line with the tongue K. When the machine is to be used as a walking-cultivator, the bar V is turned forward upon the upper side of the tongue K, so as to be entirely out of the way. The bar V may be strengthened, when turned down for use, by the flanged bars Y, attached to the lower side of the tongue K and bar V, and the flanged ends of which abut against each other.

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

1. The coupling C, made of two plates having half-round grooves near the front and semicircular grooves near the rear, in combination with axle and continuous double beam, as and for the purpose specified.

2. The curved bars E, provided at their lower ends with grooves to receive the plow-standards F, pivoted to the rear ends of the plow-beams D, and provided at their upper ends with wooden break-pins, substantially as herein shown and described.

3. The combination, with the axle B and the guide-pulleys O, of the coupling P, made in two parts, and provided with recesses in their inner surface to receive pins attached to said axle, substantially as herein shown and described.

4. The combination, with the axle B and the tongue K, of the coupling L, made in two parts, and provided with recesses in their inner surface to receive pins attached to said axle B, substantially as herein shown and described.

CHARLES R. HARTMAN.

Witnesses:

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