(No Model.)

2 Sheets—Sheet 1.

A. PLAGMAN.

WHEEL CULTIVATOR.

No. 525,231. Patented Aug. 28, 1894.

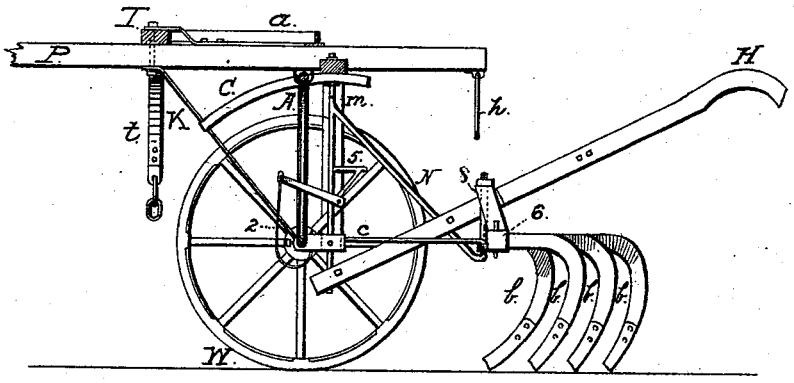

Fig I

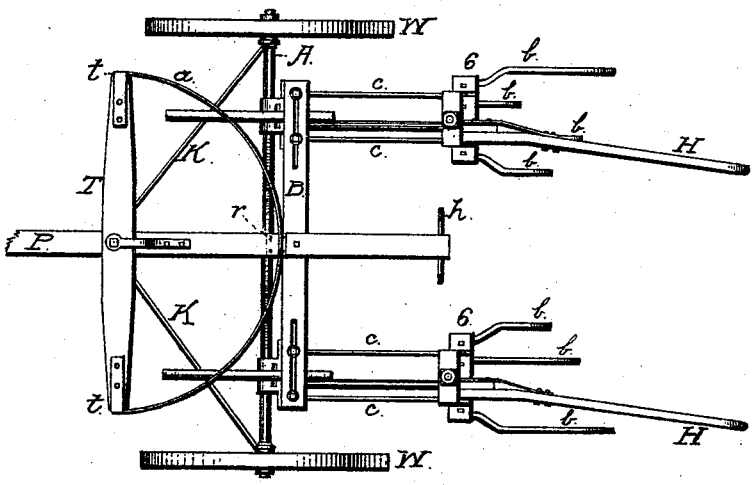

Fig II

Witnesses.
W. A. Darling
J. H. Morse

Inventor.
A. Plagman
by
Harold A. Fields
Attorney

(No Model.) 2 Sheets—Sheet 2.

A. PLAGMAN.

WHEEL CULTIVATOR.

No. 525,231. Patented Aug. 28, 1894.

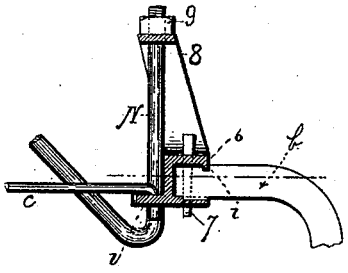

Fig III

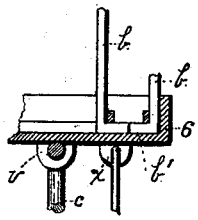

Fig IV

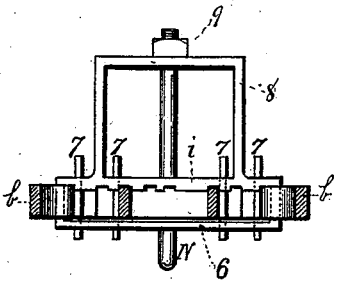

Fig V

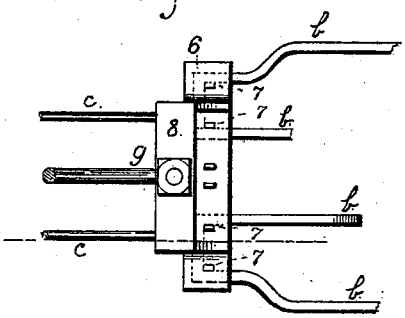

Fig VI

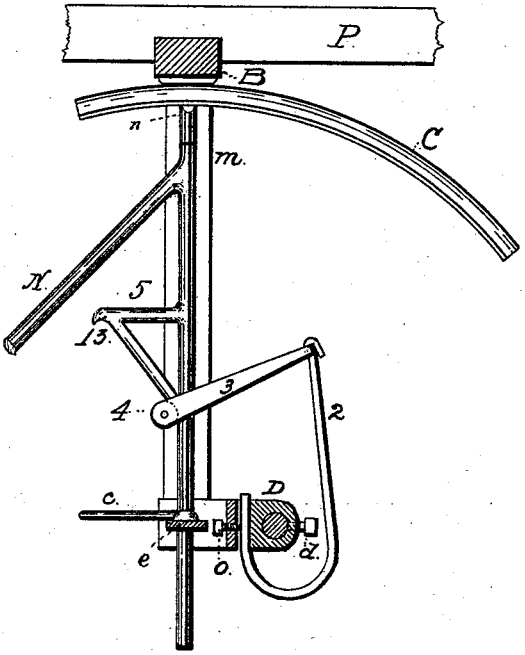

Fig VII

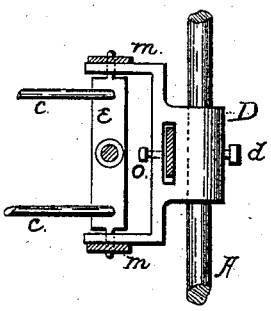

Fig VIII

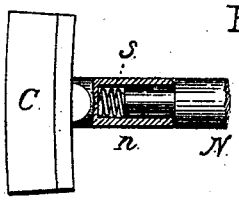

Fig IX

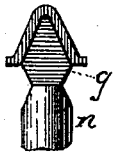

Fig X

Witnesses.
W. L. Darling
J. V. Morse

Inventor.
A. Plagman
by Harold A. Wells
Attorney.

UNITED STATES PATENT OFFICE.

ADOLPH PLAGMAN, OF DAVENPORT, IOWA.

WHEEL-CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 525,231, dated August 28, 1894.

Application filed January 8, 1894. Serial No. 496,223. (No model.)

To all whom it may concern:

Be it known that I, ADOLPH PLAGMAN, a citizen of the United States, residing in Davenport, in the county of Scott and State of Iowa, have invented a new and useful Improvement in Wheeled Cultivators, of which the following is such a full, clear, and exact description as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to that class of wheeled cultivators having a frame work composed of a tongue and a cross piece thereon, and an axle. Its object is first, to provide a low draft, without liability of pulling the plow to one side; second, to provide a new and improved means of coupling the beams to the frame work of the plow, so as to avoid looseness and wabbling; third, to provide an improved spring to assist in elevating the shovels; fourth, to provide an improved means for attaching the short shovel beams to the main beam of the cultivator, whereby they are held firmly in place, together with certain other new and useful improvements, whereby a more serviceable and inexpensive cultivator is secured.

The object of the invention further is to furnish a rigid coupling device so as to prevent entirely sidewise wabbling in the shovel beams.

Reference is had herein to the drawings accompanying and forming part of this specification, wherein the same character of reference refers to the same part in the several views.

In the said drawings, Figure 1, is an elevation of the cultivator. Fig. 2, is a plan of the same. Figs. 3, 4, 5, and 6, are detail views showing the manner of attachment of the shovel beams. Figs. 7, 8, 9, and 10, are detail views of various parts more specifically referred to hereinafter.

The main framework of my cultivator is composed of the pole P, and the crossbar B, secured thereon. The pole is supported by the arched axle A, on which are the wheels W, as usual in cultivators of this class. Upon the tongue P, is bolted the evener T, from the ends of which the arms *t t* project downward for a convenient distance, and are adapted to bear the single-trees near their lower extremities. The arms *t t* are preferably made of steel, strong and rigid enough not to be twisted or sprung by the pull of the horses, and are securely fastened to the respective ends of the evener. The semicircular steel strip *a*, is welded or otherwise firmly secured at its ends to the arms *t t* and rests upon the tongue behind the evener, upon which it is held by the plate *r*, so as to allow it to slip back and forth as the ends of the evener move forward and backward. By this arrangement the strip *a*, bearing upon the tongue relieves the twisting strain upon the evener and its bolt, and renders it possible to apply the draft at the bottom of the arms *t t*. Upon either end of the axle is borne a bracket D, (see Fig. 8) adjustably secured thereon by the set screw *d*. The bracket D bears the horizontally pivoted plate *e*. The hanger *m* is suspended by bolts which pass through a slot in the crosspiece B, so being capable of adjustment to correspond to the position of the bracket D. The downward projecting arms of the hanger *m* inclose the jaws of the bracket D and support the pivoted plate *e*.

The two drawbars *c c* are attached at the rear to the ears *x x* on the front of the box 6, in which are fastened the shovel beams *b b*. The drawbars are attached as aforesaid by vertical pivots. The result is that when the shovels are moved laterally by the operator the line of the front of the box 6, remains parallel with that of the axle, and the angle at which the shovels plow the earth remains the same relatively to the line of draft of the machine.

The box 6 as shown in Figs. 3, 4, 5, and 6 is long and narrow and open at the rear. From the upper rear edge a flange *i* (see Fig. 5) extends downward for a short distance and is notched to receive the shovel beams. The forward portion of the bottom of the box has a shoulder of a height equal to the depth of the notches in the flange. The forward extremity of each beam is bent at right angles. Where the beam is in position the bent portion is in contact with the inner surface of the front wall of the box. The upper edge of the beam engages a notch and a pin 7 fit-

ting closely the inner angle of the beam holds it firmly in place. The beams may be arranged in pairs, as shown in the drawings, the bent ends of the beams of each pair being bent in opposite directions for a distance equal to one-half the distance between the notches. Notches and holes for pins 7 7 are provided so that two, three, or four shovel beams may be attached and properly arranged. The said box and beams are connected as aforesaid with the bracket D by means of the pivoted drawbars *c c*, and the coupling is perfected by means of the bar or rod N, by which the handles are afforded a firm and rigid attachment to the shovel beams as hereinafter set forth. The forward leg of the said bar passes through the pivoted plate *e*, extends for a short distance below it and extends upward to the guide C, which is riveted or otherwise secured upon the hanger *m*. The rod N is provided with a shoulder which rests upon the plate *e*. The guide C is in the form of an arc of a circle, and is provided with a groove on its under surface for the reception of the head *g* of the cap *n*, which fits over a spiral spring S on the tip of the bar N above its forward leg. The head *g* is thereby kept pressed firmly in the groove (see Figs. 9 and 10) which serves to guide the tip of the bar N as it moves forward when the shovels are raised; and the cap *n* turns upon the tip of the bar, as the latter is moved laterally. The middle part of the bar N extends downward and backward to a point below and immediately in front of the box 6, where it turns upward and its rear leg passes through the ear *v* on said box, and continuing upward passes through the top plate of the standard 8, upon the box where it is secured by the nut 9. The standard 8 is of convenient height and inclined forward enough to allow the rear leg of the bar M to pass through its upper plate without bending.

The handle H passes between the legs of the standard 8 below its top plate in a downward-slanting direction to a point below the pivoted plate *e*, in the bracket D. It is evident that when the handle is in this position it comes in contact with the bar N at three points and it is firmly secured to the said bar at each of those points by means of eye-bolts. By the means described the handle is firmly and rigidly attached to the bar N. When the handle is raised the pivoted plate *e* turns on its pivot and the head *g* follows the groove in the guide C.

The rear end of the pole is provided with hooks *h*, for hanging up the handles, so that the shovels may be carried above the ground when desired. The spring 2 assists in raising the handles. The lower portion of said spring is held by the set screw *o*, in the bracket D, in front of the axle. The spring is given its tension by being brought around under the axle and up in front, where the arm 3, extends backward and carries the wheel 4 which bears upon the front of the forward leg of the bar N. The bearing surface for the wheel is the hypotenuse of the right triangle shaped bracket 5, which terminates in the hook 13 at its upper end. The arm 3 may be made double so as to pass on each side of the rod N. By this arrangement the spring exerts a constantly increasing pressure upon the rod, as the shovels are raised.

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

1. In a wheeled cultivator the combination with the tongue and evener of a semicircular strip of wood or metal attached at its ends to the ends of the evener, free to move with the backward and forward movement of the evener and adapted to bear upon the tongue, as described.

2. The combination in a cultivator of a pole, an evener attached thereto, rigid arms depending from the ends of the evener and a semicircular brace in the plane of the movement of the evener, extending backward and adapted to bear upon the pole.

3. In a wheeled cultivator, a coupling device consisting of a rod extending from a point at, or below the level of the center of the wheels, upward to the cross piece of the plow, moving on a horizontal pivot at, or near the level of the center of the wheels and having the motion of its upper end confined by a guide, said rod having an extension made integral therewith, extending backward and downward from a point near its upper end, and then turned upward, and being rigidly and firmly attached to the shovel beams, and handle of the cultivator.

4. In a wheeled cultivator the pivoted plate *e*, the box 6, the shovel beams secured within said box, the draw bars *c c* connecting the box 6 and plate *e* and the handle H, substantially as described.

5. In a wheeled cultivator the combination of a box adapted to receive, and hold the ends of the shovel beams by means of pins engaging their bent ends, and bearing upon it a standard, with a coupling rod having its rear leg passing downward from the upper plate of said standard through an ear on the said box; thence being bent forward and upward to a point immediately below the cross beam of the plow, where it articulates with a grooved guide, thence being bent downward and passing through a pivoted plate attached to the axle of the plow.

6. In a wheeled cultivator, a frame and wheels, a gang of cultivator shovels, a rod N having a vertical portion and an inclined portion extending between the upper end of the vertical portion and the shovel frame, the upper end of said rod N being held in the groove of a guide C said rod being piv-

oted to have tilting movement, substantially as described.

7. In a wheeled cultivator the combination of a handle with a rod or bar, said bar having its longer leg pivoted at or near the axle of the cultivator, thence extending upward and having its upper portion confined in a guide, said bar, thence extending downward and backward, and turning upward at the rear, with the axle, handle, and shovel-beams.

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Witnesses:
HAROLD A. WELD,
SHERMAN W. SEARLE.