

(No Model.)

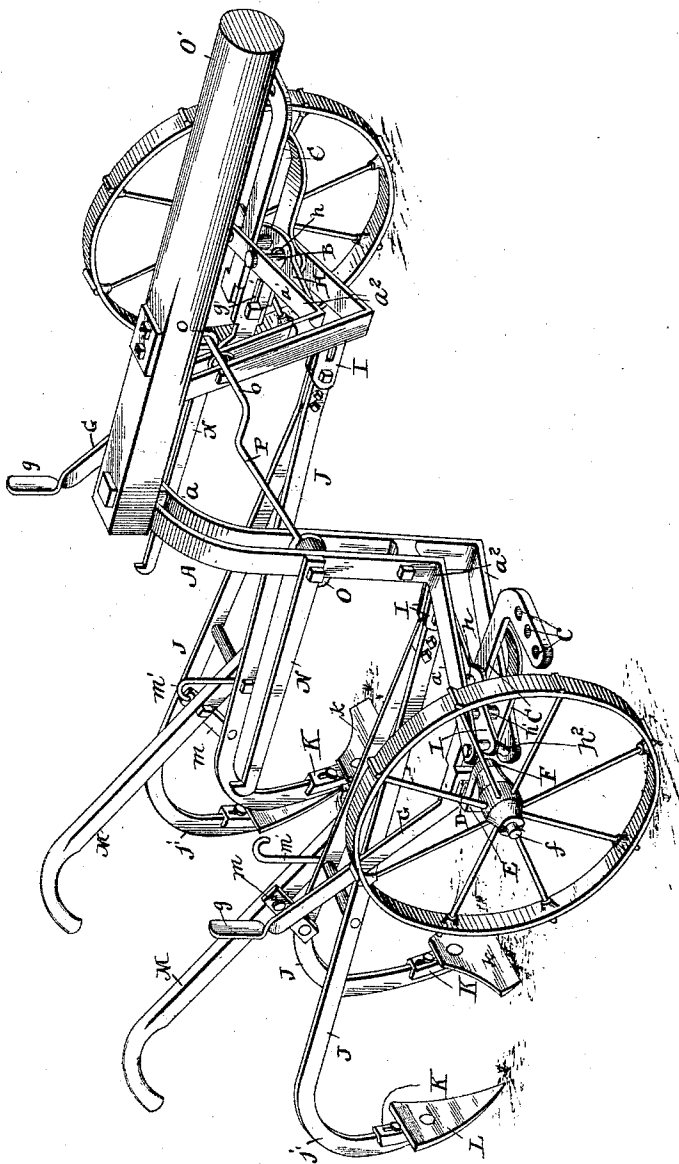
3 Sheets—Sheet 1.

C. A. PFEIFER.
PLOW.

No. 482,751.

Patented Sept. 20, 1892.

FIG. 1.



Witnesses

Inventor

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(No Model.)

3 Sheets—Sheet 2.

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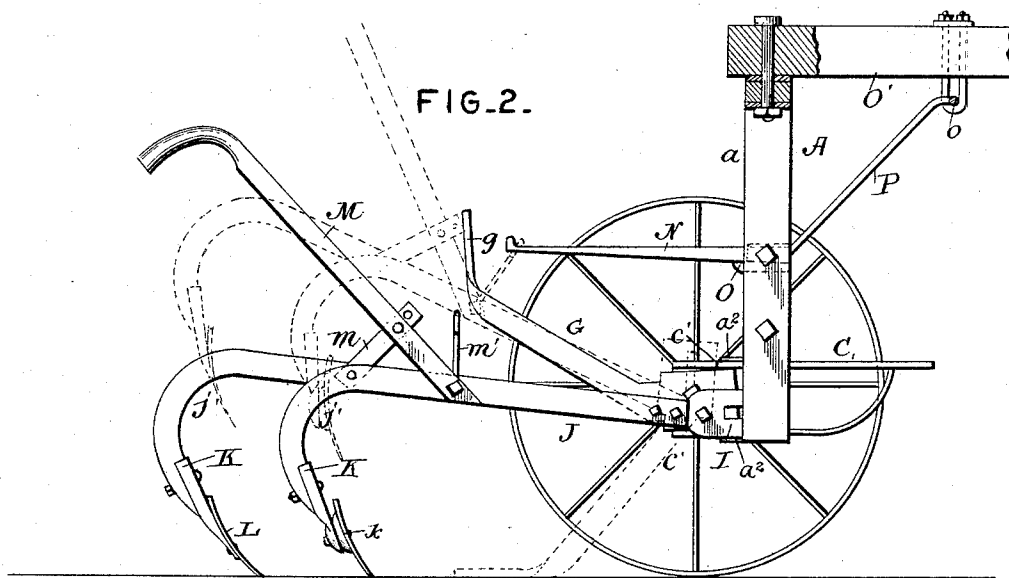


FIG. 3.

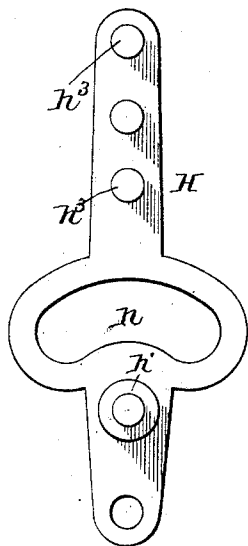
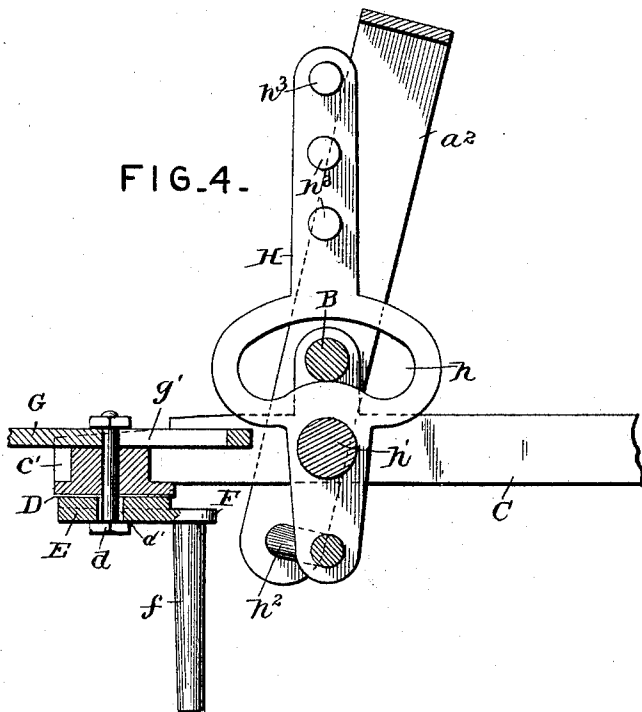


FIG. 4.



Witnesses

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(No Model.)

3 Sheets—Sheet 3.

C. A. PFEIFER.
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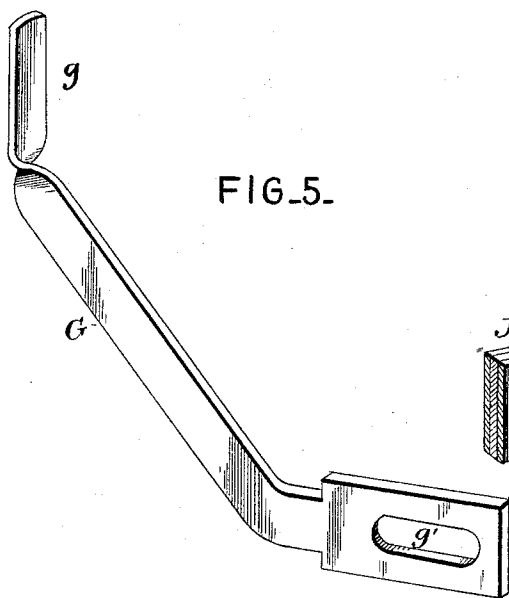


FIG. 5.

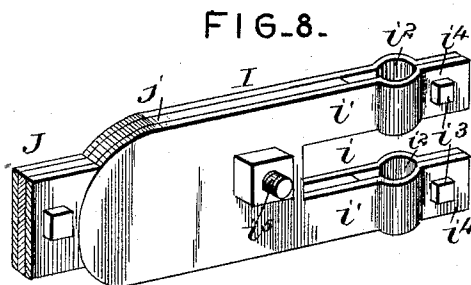


FIG. 8.

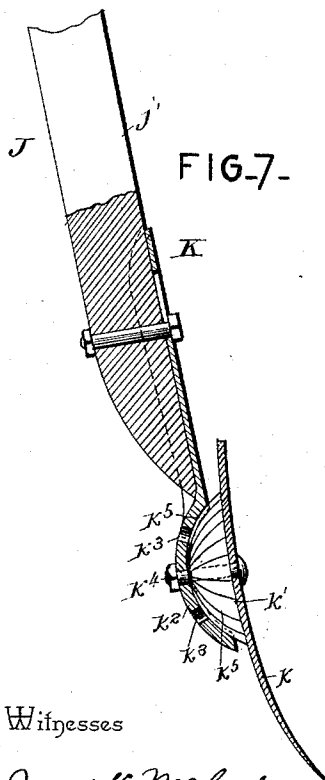


FIG. 7.

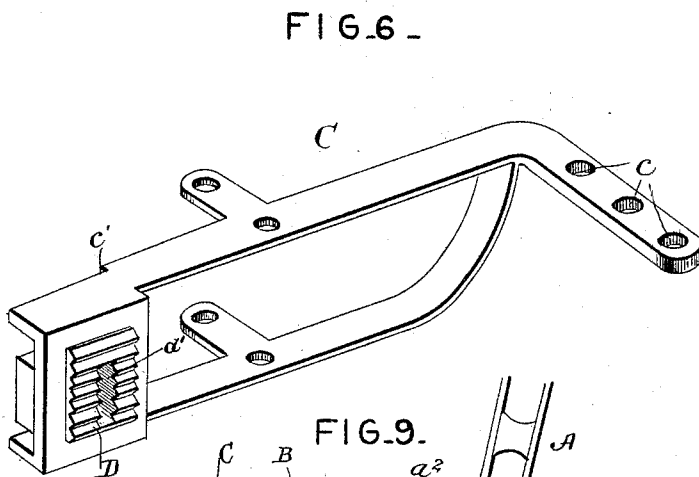


FIG. 6.

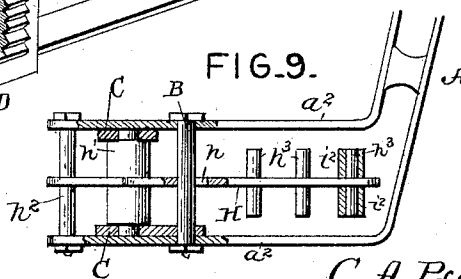


FIG. 9.

Witnesses

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UNITED STATES PATENT OFFICE.

CHARLES ALBERT PFEIFER, OF WAPELLO, IOWA.

PLOW.

SPECIFICATION forming part of Letters Patent No. 482,751, dated September 20, 1892.

Application filed February 3, 1892. Serial No. 420,213. (No model.)

To all whom it may concern:

Be it known that I, CHARLES ALBERT PFEIFER, a citizen of the United States, residing at Wapello, in the county of Louisa and State of Iowa, have invented a new and useful Plow, of which the following is a specification.

This invention relates to cultivators; and it has for its object to provide a cultivator particularly adapted for the cultivation of corn.

It is the main object of this invention to provide a cultivator which shall be so constructed as to effectively equalize the draft of the same and the draw of the cultivating-plows connected therewith.

It is also the aim of this invention to provide for the vertical adjustment of the cultivator from the wheels and to so combine the various parts thereof as to allow either horse to crowd ahead, lag behind, or crowd to either side without changing the position of the plows; also, to provide for plowing close to the ends of the rows, turning around in a small space, and having the team nearer the plows for accomplishing this.

With these and many other objects in view, which will readily appear as the nature of the invention is fully understood, the same consists in the novel construction, combination, and arrangement of parts hereinafter more fully described, illustrated, and claimed.

In the accompanying drawings, Figure 1 is a perspective view of a cultivator constructed in accordance with my invention. Fig. 2 is a vertical longitudinal sectional view of the same. Fig. 3 is a detail plan view of one of the plow-levers. Fig. 4 is a detail horizontal sectional view through one of the arch-bar axles and equalizing mechanism therein. Fig. 5 is a detail in perspective of one of the slotted feet. Fig. 6 is a similar view of the draft or equalizing lever. Fig. 7 is a detail sectional view of one of the adjustable plow feet or scrapers. Fig. 8 is a detail in perspective of one of the plow-clevises or coupling-plates. Fig. 9 is a detail sectional view through one of the axle-arms.

Referring to the accompanying drawings, A represents a curved arch axle having the ordinary central arch *a* and the opposite axle ends or portions *a'*, which in the present instance extend to either side of the cen-

tral arch and at a slight angle rearwardly therefrom. The arch axle A comprises spaced bars running parallel with each other to form the axle and widening at the axle ends *a'* to leave sufficient space between the parallel plates or axle-arms *a''*, which comprise the axle ends, to accommodate the equalizing and draft mechanism to be described.

Pivotaly mounted upon the bolts B, passing through the opposite axle ends and working between the plates of said ends, are the open equalizing draft-levers C, which extend in front and in rear of the axle ends and are provided at their front extremities with a series of perforations *c*, with which is connected the single or double trees of the team connected to the cultivator. The other ends of said levers C are provided with the notched blocks D, which are adapted to receive the notched blocks E at one end of the adjustable spindle-arms F, carrying at their other ends the outwardly-extending wheel-spindles *f* and securely clamped to the notched blocks D by means of the bolts *d*, passing therethrough and through the vertical slots *d'* in the block ends of the draft-levers C and said spindle-arms. Ordinary wheels G are mounted on said spindle-arms *f* and are adapted to adjust the whole cultivator-frame and the plows attached thereto vertically, according to the position at which the said spindle-arms F are clamped to the block ends of the draft-levers C, by means of the vertically-adjustable bolts *d*. The ends of the draft-levers C directly opposite the blocks E thereon are provided with the inner shoulders *c'*, which are adapted to receive the edges of the traveling sliding feet G. The said feet G are provided with flat treads *g*, adapted to travel upon the surface of the ground, and with upper slotted ends *g'*, working over the bolts *d* upon the inner sides of the draft-levers C, and are designed to support the weight of the machine when the plows are not in use, and therefore take the strain off the team. When the said feet are resting upon and traveling over the ground, the weight of the machine presses the same upward, and thus causes the inner edges of the slotted ends to bear against the shoulders *c'* and hold them in position; but when not in use the said feet may be drawn

down to the limit of their slots and slide within the open levers C, and thus supported up and out of the way.

Working between the axle and plates a^2 and over the pivot-bolts B are the plow-levers H. The said plow-levers H are each provided with the curved slots h , which work over the opposite pivot-bolts B, and in rear of said slots with the projecting pivot studs or pins h' , which pivotally engage the open draft-levers C directly in rear of their pivot-bolts B, and the outermost ends of the levers H are loosely mounted over the bowed or crank bolts h^2 , which thus allow the said levers H to swing within the axle ends as the draft-levers C move to either side laterally as the team crowds forward, lags behind, or crowds to either side, such motion of the team communicating motion from the pivot-studs h' , carried by the draft-equalizing levers, and therefore to the swinging plow-levers H, moving only to the front and rear of the cultivator. The inner ends of the plow-levers H are provided with a series of coupling-studs h^3 , projecting above and below the same to receive the pivoted coupling-plates I, connected therewith and to the front ends of the opposite plows J. The said coupling-plates I are each provided with end slots i , taking over the horizontal plow-levers H and forming the upper and lower arms i' . Each of the parallel arms i' of the coupling-plates I are provided with the clamping-sockets i^2 , which take over the upper and lower studs, respectively, and which are clamped thereon by means of suitable bolts i^3 , passing through the perforated lugs i^4 , extending beyond the studs with which the recesses of each plate engage, and thus serve to take the strain off of the ends of the couplings engaging the studs. The plates I are clamped together and pivoted to the plows J by means of the pivot and clamping bolts i^5 , passing through the rear ends of the same and the connecting-plates j at the front ends of the plow-beams. The said plows may be adjusted to any one of the series of projecting coupling studs or pins at the inner ends of the levers H. Each of the said plows are provided with the standard-beams j' , one of which travels in advance of the other, as in ordinary cultivator-plows, and are provided with the vertically-adjustable feet K. The inner beams or standards preferably carry the squared and approximately horizontal scrapers k , which may be adjusted in several positions to form a shovel-sweep and to adapt itself for stirring, scraping, hilling, or other uses by adjusting the same upon the adjustable feet K. The said scrapers are provided with the cup disks k' , which receive the perforated cup disks k^2 at the lower ends of the adjustable feet K upon the inner beams of the plow. The feet-disks k^3 are provided with a central perforation and a concentric circular series of adjusting perforations k^4 , which are engaged at will by the

adjusting and securing bolts k^4 , passing there-through and through the scrapers k to adjust the same regularly at any angle with respect to the plow shank or beam to adapt it to the various uses herein set forth. Both of the cup-shaped disks forming the couplings just described are provided with serrated faces k^5 , which serve to hold the scrapers k in any position to which the same may have been adjusted.

To the lower ends of the adjustable feet K, secured to the outer and longer standard-beams, are the ordinary shovels L, traveling in rear of the outer edges of the scrapers, and thus form a combination therewith which especially adapts the cultivator for cultivating corn, as will be quite apparent to those skilled in the art.

Each of the plows J is provided with the steadying-handles M, which may be adjusted up and down by means of the perforated adjusting-plates m , bolted thereto and to one of the plow-beams, whereby the operator may control the movement of the plows. Each of the plows J is also provided with the supporting-hooks m' , which are adapted to be hooked over the shouldered supporting-arms N. The said supporting-arms N are pivoted at their front ends on each side of the arch a and rest upon the stops O, taking therebeneath and supporting the same in a horizontal position, said supporting-arms being provided with outer shoulders engaged by said hooks to support the plows when not in use, which plows may be readily thrown up on account of their pivotal connection with the coupling-plates I, connecting the same to the swinging levers H. When the plows are held in this position, the feet G are pulled out and adjusted to travel upon the ground and support the weighted frame and relieve the team from undue strain, as has already been noted.

Pivotaly secured to the top of the arch a is the forwardly-extending tongue O', which is provided with an eye or hook bolt o directly in front of its pivotal connection with the arch. The said eye or hook bolt engages the forwardly-projecting brace-support P, also secured to said arch, and while bracing the said tongue allows the same lateral play, so that the movement of the team to either side will not change the direction of travel of the plows. It will now be readily observed that no matter in what direction the team crowds or lags the direction of travel of the plows will not be changed, and the same will run evenly and uninterruptedly, as will be quite apparent and as has already been noted.

The construction, operation, and many advantages of the herein-described cultivator are now thought to be apparent without further description.

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

1. In a cultivator, the combination of an

arch axle having a central arch and opposite pairs of parallel axle arms or ends extending rearwardly at an angle from the central arch, horizontal equalizing draft-levers pivotally mounted within the opposite axle ends, the supporting-wheels vertically adjustable on the rear ends of said draft-levers, and the cultivating-plows attached to the draft-levers, substantially as set forth.

2. In a cultivator, the combination, with the axle having parallel axle arms or ends, of horizontal equalizing draft-levers pivotally mounted within the opposite axle ends, the supporting-wheels adjustably connected to the rear ends of said draft-levers, the horizontal plow-levers pivotally mounted within said axle ends and carried by said horizontal draft-levers, and the cultivating-plows connected with the swinging ends of said plow-levers, substantially as set forth.

3. In a cultivator, the combination, with the axle having the central arch and projecting axle ends, of the equalizing draft-levers connected with said axle ends and provided with notched blocks at their inner ends, adjustable spindle-arms having notched blocks at one end, adjustably clamped to the notched blocks of said draft-levers, and wheel-spindles at their other ends, and the cultivating-plows attached to the draft-levers, substantially as set forth.

4. In a cultivator, the combination, with the axle, of the horizontal draft-levers mounted in the axle ends and provided with notched blocks at their inner ends, vertically-adjustable spindle-arms having notched disks at one end, adjustably clamped to the notched blocks of said draft-levers, and wheel-spindles at their other ends, and the cultivating-plows attached to said horizontal draft-levers, substantially as set forth.

5. In a cultivator, the combination, with the axle having the opposite parallel axle arms or ends, of equalizing draft-levers pivotally mounted within the opposite axle ends and carrying the supporting-wheels, horizontal plow-levers pivotally mounted within said axle ends and loosely connected with said pivoted draft-levers, said plow-levers having limiting-slots working over the draft-levers' pivot-bolts, and the cultivating-plows adjust-

ably connected with the swinging ends of said plow-levers, substantially as set forth.

6. In a cultivator, the combination, with the axle having the opposite parallel arms or ends, straight pivot-bolts passing through said axle ends, equalizing draft-levers pivotally mounted on said bolts within the axle ends and carrying the supporting-wheels, bowed or crank bolts located in the extreme ends of the axle-arms, horizontal plow-levers pivoted at their outer ends to said crank-bolts and having pivot-studs pivotally engaging the draft-levers, curved slots working over said straight pivot-bolts, and a series of coupling pins or studs at their inner swinging ends, and the cultivating-plows attached to said coupling-pins, substantially as set forth.

7. In a cultivator, the combination, with the axle, of the open wheel carrying draft-levers connected with the axle-arms and provided with shoulders at their inner ends and one side, sliding supporting-feet having flat-tread portions at one end and opposite slotted ends and bolts passing through said slotted ends and the shouldered ends of said draft-levers, said supporting-feet being adapted to have the heads thereof slide over said bolts to engage said shoulders and be slid within said open draft-levers, respectively, substantially as set forth.

8. In a cultivator, the combination, with the axle, the equalizing-levers working within each axle and having a series of coupling-studs and the cultivating-plows, of the coupling plates or clevises pivotally connected with the front ends of the plows and comprising separate plates having end slots taking over the equalizing-levers, coupling-sockets receiving the studs above and below the levers, and perforated lugs extending beyond said recesses, and clamping-bolts passing through said lugs, substantially as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

CHARLES ALBERT PFEIFER.

Witnesses:

ED HICKLIN,
THOS. S. BELL.