(No Model.) 2 Sheets—Sheet 1.

W. H. PARLIN.

CULTIVATOR.

No. 398,177. Patented Feb. 19, 1889.

Fig. 1

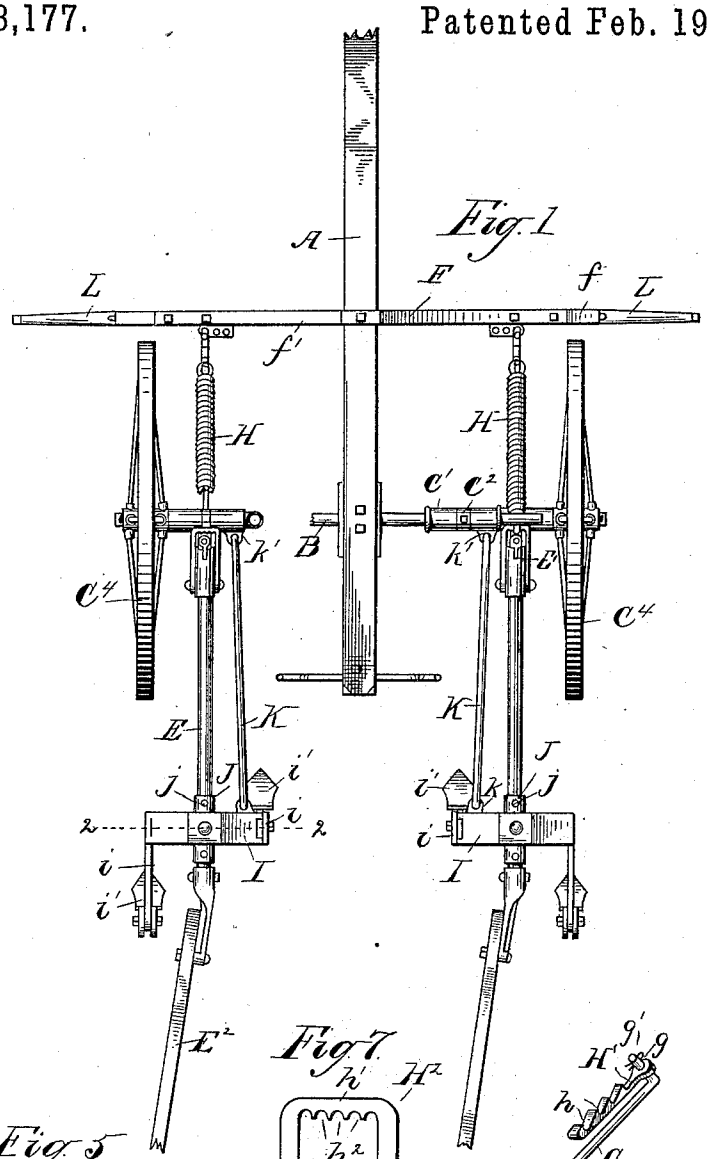


Fig. 7

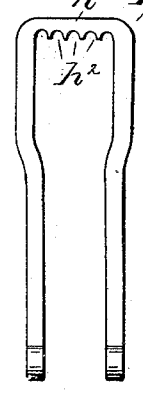


Fig. 5

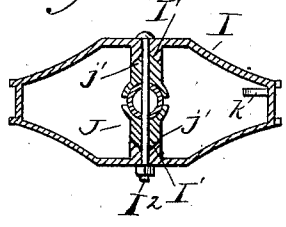
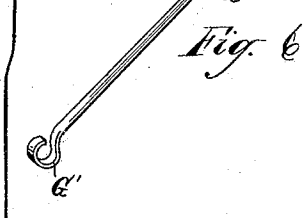


Fig. 6



Witnesses.
B. M. Whitaker.
A. M. Best.

Inventor
William H. Parlin.
By Johnson Thacher
Attys.

N. PETERS. Photo-Lithographer, Washington, D. C.

(No Model.) 2 Sheets—Sheet 2.

W. H. PARLIN.

CULTIVATOR.

No. 398,177. Patented Feb. 19, 1889.

Fig. 2.

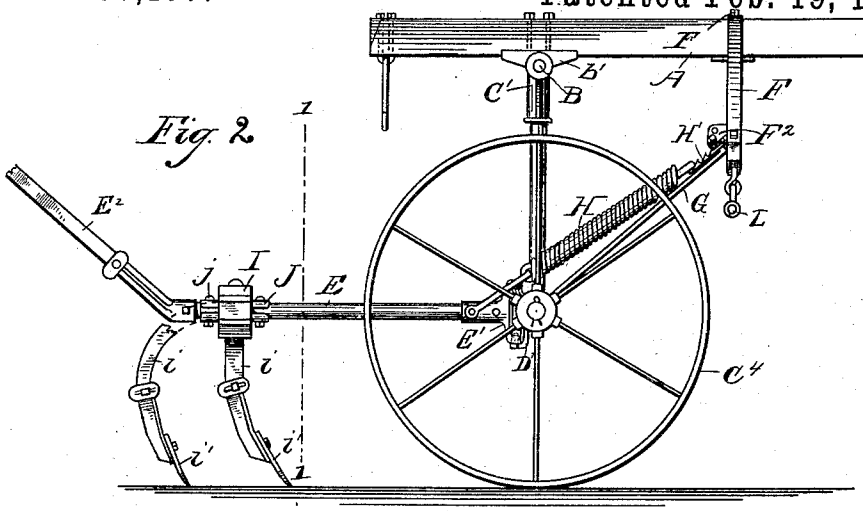


Fig. 3.

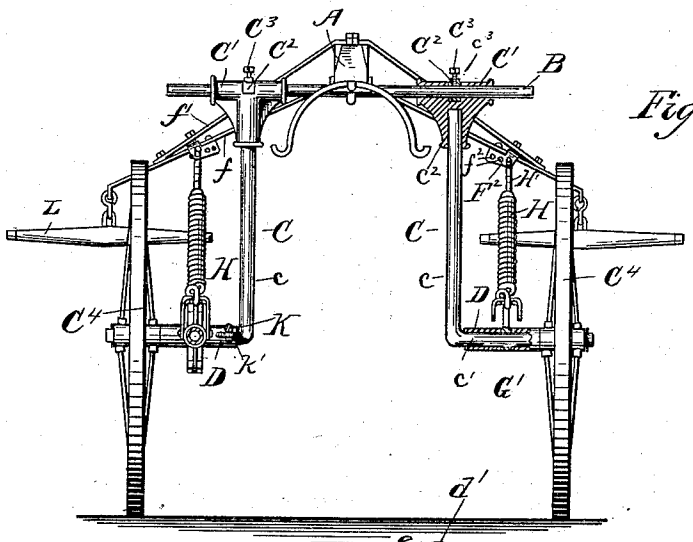
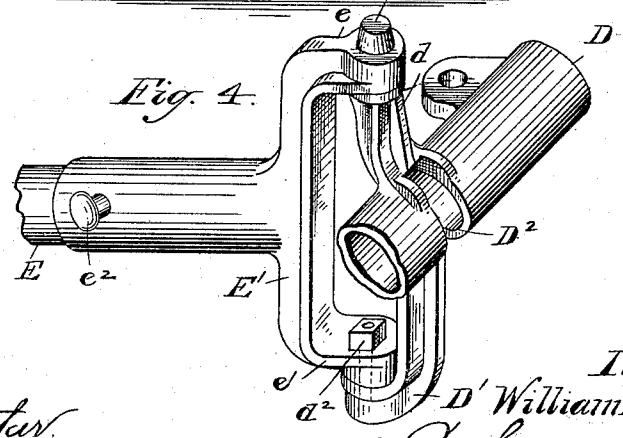


Fig. 4.



Witnesses.

B. M. Whitaker.

A. M. Best.

Inventor.

William H. Parlin.

By Coburn & Thacher

Attys.

N. PETERS. Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM H. PARLIN, OF CANTON, ILLINOIS, ASSIGNOR TO THE PARLIN & ORENDORFF COMPANY, OF SAME PLACE.

CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 398,177, dated February 19, 1889.

Application filed April 26, 1888. Serial No. 271,994. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. PARLIN, a citizen of the United States, residing at Canton, in the county of Fulton and State of Illinois, have invented a certain new and useful Improvement in Cultivators, which is fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 is a plan view of a cultivator embodying my invention, portions thereof being broken away; Fig. 2, a side elevation of the same; Fig. 3, a sectional view taken on the line 1 1 of Fig. 2; Fig. 4, a detail perspective view of the sleeve and coupling detached; Fig. 5, a detail sectional view taken on the line 2 2 of Fig. 1; Fig. 6, a detail perspective view of the draft-rod detached, and Fig. 7 a detail view of the yoke detached.

Like letters refer to like parts in all the figures of the drawings.

My invention relates to cultivators, and more particularly to that class in which two gangs of cultivators or shovels are employed, operating one on each side of the row.

The object of my invention is to provide a cultivator which shall possess various advantages of construction and operation, as hereinafter more particularly pointed out; and to these ends my invention consists in certain novel features, which I will now proceed to describe, and will then particularly point out in the claims.

In the drawings, A represents the tongue of the cultivator, which has attached to it near its rear end a transverse bar, B, preferably constructed of iron or steel and cylindrical in cross-section, it being secured to the under side of the tongue by means of a clip, *b*, and saddle *b'*, or in any other suitable manner. On each end of this bar there is pivoted an arm, C, consisting of an upright portion, *c*, and of a horizontal portion, *c'*. The connection between the said arm C and the bar B is effected by means of a sleeve, C', mounted on the bar and free to rotate thereon, said sleeve being provided with a socket, c^2, in which the upper end of the vertical portion *c* of the arm C is inserted and secured. The sleeve C' is cut away centrally, as shown at c^3, and there is mounted on the bar B at this point a collar, C^2, which is secured on the bar by means of a set-screw, C^3.

The construction is identical on each side of the tongue A, and it will be seen that the sleeves C' may be moved toward and from each other, as desired, along the bar B, and may be secured in position thereon after adjustment by securing the collars C^2 on the bar B through the medium of the set-screws C^3. At the end of each horizontal portion *c'* of each arm C there is mounted a wheel, C^4, by means of which the frame of the cultivator is supported, and on each of said horizontal portions *c'* there is mounted between the said wheel and the vertical portion *c* a sleeve, D, which is free to rotate thereon. This sleeve furnishes a means of attachment for the gang, and is provided for that purpose with an upward projection, *d*, terminating in a pivot, *d'*, and with a downward projection, D', which is perforated to receive a pivot-bolt, d^2.

The beam E of the gang is provided with a head, E', having at the top and at the bottom forwardly-projecting perforated lugs *e e'*, the former of which receives the pivot *d'*, while the latter receives the pivot-bolt d^2. It will thus be seen that each gang is connected to its respective arm C in such manner as to move freely both vertically and horizontally.

On the tongue A there is pivoted at a point in front of the point of attachment of the cross-bar B an evener, F. This evener is V-shaped, the angle of the V being at the point where the evener is pivoted to the tongue, and the two bars extending downward and outward from this point. It is preferably constructed of two bars of iron or steel, *f f'*, the former of which passes under the tongue, while the latter passes over the tongue, this construction serving to furnish a light and at the same time strong and firmly pivoted evener, the pivot-bolt F' passing through both of the bars *f f'*. The evener F is provided on each side of the tongue, at a point about midway between its pivot and its ends, with a plate, F^2, provided with a transverse series of perforations, f^2, which serve as a means of attachment for the draft-rods G. Each draft-rod is provided at its forward end with a projection, *g*, bent at right angles and forming

a pin, which may be inserted through any one of the holes f^3 in the plate F^3, this construction serving to render the connection between the draft-rod and the evener adjustable. A key, g', inserted through the pin g, serves to secure the draft-rod after it has been adjusted. At its rear end each draft-rod is connected to the arm C or to the sleeve D at a point directly in line with the beam E of the gang. This connection is preferably effected in the following manner: The sleeve D is cut away, as shown at d^2 in Fig. 4, at a point directly in line with the pivots d' and d^2, and the rear end of the draft-rod is provided with a collar, G', which passes around the horizontal portion c' of the arm C at the point where it is exposed by the cutting away of the sleeve D. By reason of this construction the draft-rods are always held with their rear ends exactly in line with the front ends of the beams E of the gangs.

Each gang is connected to the evener by means of a spring, H, these springs being spirally-coiled springs, each with its forward end connected to the evener at a point in line with the connection of the draft-rod and its rear end connected to the beam of the gang at a point immediately above and in line with the vertical axis of rotation thereof. These connections are preferably effected in the manner shown in the drawings, which is as follows:

Upon the projecting end of the pin g there is mounted loosely, so as to pivot thereon, a bar, H', provided with a series of notches, h, and the spring H is provided with a loop or hook at its forward end, which may engage with either one of said notches to give the spring the desired tension. There is pivoted to the beam E at a point slightly in the rear of the front end thereof, on suitable horizontal pivots, e^2, a U-shaped yoke or loop, H^2, the front cross-bar, h', of which is provided on its rear edge with a series of notches, h^2. The rear end of the spring H is provided with a corresponding hook, which may engage with any one of these notches, and thus adjust the lateral pull which the said spring will exercise upon the gang. It will be observed that the yoke or loop H^2 serves to always hold the rear end of the spring substantially in line with the beam of the gang, although a slight lateral variation of this relation may be obtained through the medium of the notches h^2 when such a variation is desirable for the reasons hereinafter pointed out.

The beam E of each gang is preferably cylindrical in shape, being in the form of a tube of steel or iron, and is provided at its rear end with a suitable handle, E^2. I represents a cross-head pivoted on the beam E near its rear end, and having attached to it, one on each side, the shovel posts or standards i, which carry the shovels i'. This cross-head is constructed as shown in detail in Fig. 5 of the drawings, the beam E passing centrally through the same, and being connected to it in the following manner: Upon the upper and under sides of the beam there are mounted semi-cylindrical saddles or clamping-pieces J, secured thereon by bolts j and provided with conical bearing-pivots j', which project upward and downward, respectively. The cross-head I is provided with corresponding sockets, I', to receive the conical bearings j', and the whole is secured in position by means of a bolt, I^2, passing centrally through all the parts from top to bottom.

Each cross-head I is connected to the sleeve D in front of the same by means of a rod, K, the rear end of said rod passing through a lug, k, on the cross-head I, while its front end passes through a lug, k', on the sleeve D. This rod is in its general direction substantially parallel with the beam E, and its ends are free to pivot in the lugs k and k', said rod serving to always hold the cross-head I in a position at right angles to the line of motion of the cultivator.

Singletrees L are attached one to each end of the evener F, one horse being attached to each singletree in the usual manner.

The operation is as follows: In case the horses do not walk evenly together the evener F will turn upon its central pivot and assume an angular position, and through the connection of the draft-rods G to the arms C, to which the gangs are respectively attached, each gang will be caused to assume a position corresponding to that of the horse to which it is connected. In other words, each horse operates his own gang independently of the other. This movement of the gangs is, however, only about one-half as great as that of the horses and of the ends of the evener to which they are attached, since the draft-rods are connected to the evener, as hereinbefore stated, at a point about half-way between the middle and the ends of the evener. It will be, moreover, observed that the draft is direct from the beam of each gang to the evener and in a straight line with the same under normal conditions. Each gang may be freely moved vertically and horizontally independently of the other gang, and, owing to the mode of connecting the springs to the beams thereof by means of links which terminate at a point substantially in line with their vertical pivots, there is little or no tendency of the springs to draw the beams out of line after they have once been deflected laterally therefrom. In case the shovels are set at an angle, however, which would tend to give the gang a lateral movement, the rear point of attachment of the spring may be varied laterally through the medium of the notches h^2 of the link H^2, so as to cause the spring to exert a lateral pull upon the gang and counteract this tendency. By attaching the springs in the manner shown and described, it will be seen that as the rear ends of the gangs are lifted upward to raise the shovels from the ground the springs obtain an increase of leverage, which gives them greater power in holding up the gangs. Con-

versely, as the gangs are lowered this pull of the springs decreases, owing to a decrease in the leverage as the springs come more nearly in the line of draft. The arms C may be moved in and out upon the cross-bar B, so as to adjust the gangs at any desired distance from each other, and the said arms may be readily secured in position after adjustment by the means shown and described. The cone-shaped bearings or pivots of the cross-heads serve to take all the wear and strain off of the pivot-bolt, and they may be tightened up, whenever necessary, by simply tightening up the said pivot-bolt, and thereby compressing the cross-head vertically.

It is obvious that various modifications in the details of construction may be made without departing from the principle of my invention, and I therefore do not wish to be understood as limiting myself strictly to the precise details hereinbefore described, and shown in the drawings.

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

1. In a cultivator, the combination, with the gangs, free to move longitudinally independently of each other, and the pivoted arms to which said gangs are attached, of the centrally-pivoted evener arranged in front of the same and having the horses connected to its ends, and a single draft-rod for each gang, forming the sole draft-connection between said gang and the evener, and having its rear end attached immediately in front of the beam of the gang and its front end connected to the evener at a point about midway between its pivot and its ends, whereby the longitudinal motion of the gangs is reduced, substantially as and for the purposes specified.

2. The combination, with the main frame, of the pivoted arms connected thereto, the gangs connected to said arms, the centrally-pivoted evener arranged in front of the same, and draft-rods, each having its rear end connected to one of the arms immediately in front of the point of attachment of the gang and its front end connected to the evener and adjustable laterally in relation to the same, substantially as and for the purposes specified.

3. In a cultivator, the combination, with the main frame, the pivoted arms, the gangs connected to said arms, the evener arranged in front of the same, and the draft-rods connecting the arms and the evener, of constantly-acting coiled springs having their rear ends connected to the gangs and their front ends connected to the evener, substantially as and for the purposes specified.

4. In a cultivator, the combination, with the vertically and horizontally movable gang, of an evener arranged in advance of the same, a yoke or loop pivoted to the beam of the gang and provided with a series of notches, h^2, and a spirally-coiled spring having its front end connected to the evener and its rear end connected to the loop, and provided with a hook to engage with any one of the notches h^2, substantially as and for the purposes specified.

5. The combination, with the evener, of the notched bars H′, connected thereto, the vertically-swinging gangs, and the springs H, having their rear ends connected to the gangs and their front ends provided with loops to engage any one of the notches of the bars H′, substantially as and for the purposes specified.

6. In a cultivator, the combination, with the vertically and horizontally swinging gangs, the evener arranged in front of the same, and the draft-rods connecting the evener and the gangs, of coiled springs having their rear ends connected to the gangs and laterally adjustable at said connection, and their front ends connected to the evener and longitudinally adjustable at that point, substantially as and for the purposes specified.

7. The combination, with the cross-head I, having conical sockets I′, of the beam E, the semi-cylindrical saddle-pieces J, secured thereon and provided with conical bearings j' to enter the sockets I′, and the bolt I^2, passing through the same, substantially as and for the purposes specified.

WILLIAM H. PARLIN.

Witnesses:
IRVINE MILLER,
CARRIE FEIGEL.