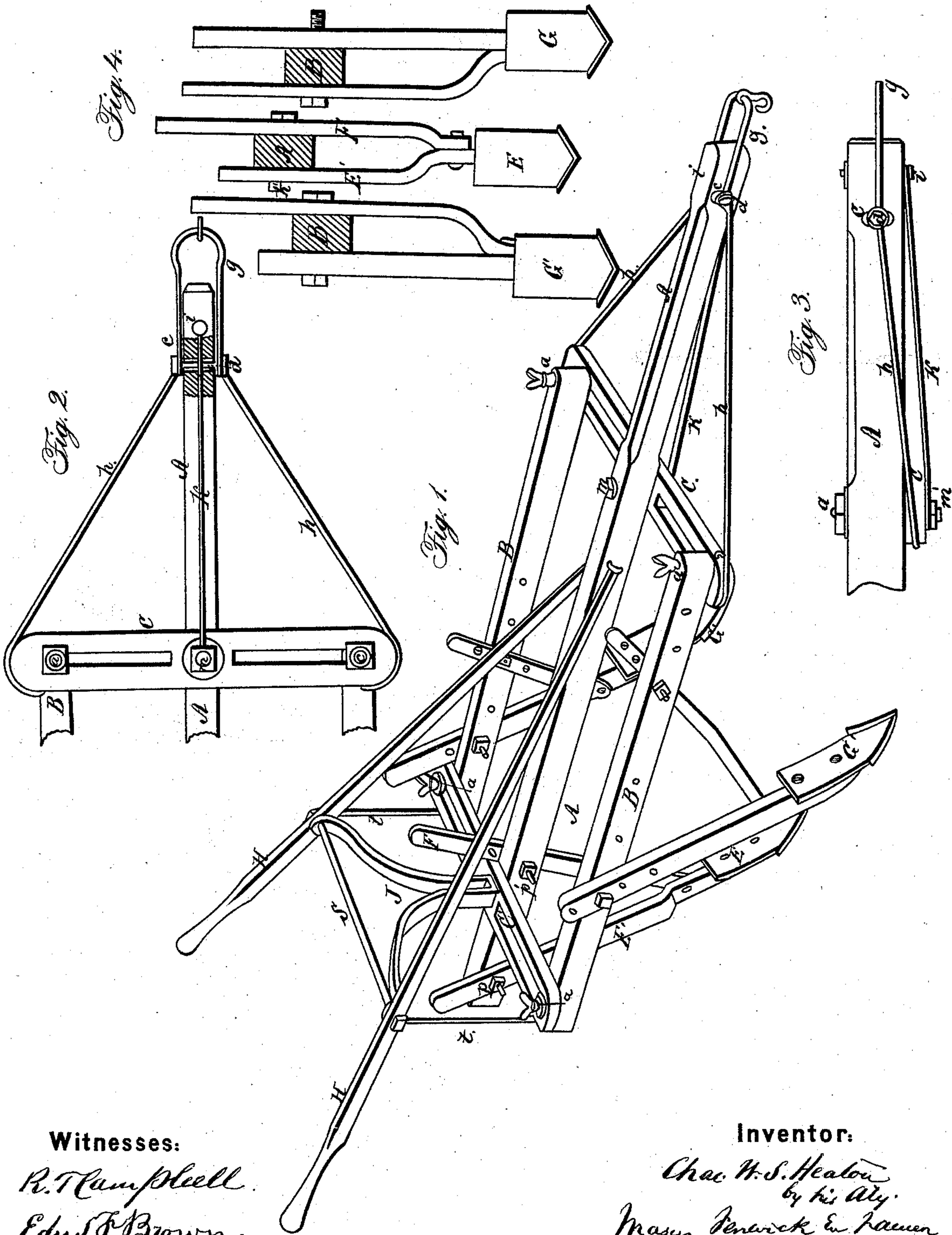


C. W. S. HEATON.

Cultivator.

No. 39,528.

Patented Aug. 11, 1863.



Witnesses:

R. T. Campbell.  
Edw. F. Brown.

Inventor:

Chas. W. S. Heaton  
by his Atty.  
Masen, Penwick & Hauser



# UNITED STATES PATENT OFFICE.

CHAS. W. S. HEATON, OF SALEM, ILLINOIS, ASSIGNOR TO JABEZ J. PIGGOTT.

## IMPROVEMENT IN CULTIVATORS.

Specification forming part of Letters Patent No. 39,528, dated August 11, 1863.

*To all whom it may concern:*

Be it known that I, CHARLES W. S. HEATON, of Salem, in the county of Marion and State of Illinois, have invented certain new and useful Improvements in Cultivators; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a perspective view of my improved cultivator complete. Fig. 2 is a bottom view of the front part of the frame and beam, showing the manner of bracing the same. Fig. 3 is a side view of Fig. 2. Fig. 4 shows the curved braces and shovel standards or stocks.

Similar letters of reference indicate corresponding parts in the several figures.

My invention relates to certain improvements in constructing and arranging the several parts of an adjustable cultivator, whereby lightness with great strength are obtained and an improved agricultural implement is made at slight cost.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

The frame of this machine consists of three longitudinal parallel beams, A B B, and two transverse beams, C C'. The central beam, A, being much longer than the two side beams, B B, it may be termed, for reference, a "draft-beam," although it will be seen from the following description that this beam is merely intended as a support for draft-rods which take the place of the draft-beam. The two side shovel-supporting beams, B B, are connected by means of vertical bolts *a* to transverse beams C C', which, being slotted, as shown in Fig. 1, allow the side beams to be adjusted laterally and set by means of the nuts on bolts *a* at any desired point. These transverse slotted supports C C' are arranged, one, C, below the central beam, A, and the other, C', on top of this beam. The longitudinal beams B B are therefore supported at their forward ends upon one of the transverse beams and at their rear ends below the other cross-beam, both of which beams are bolted at the middle of their length to the central beam by means of vertical through-bolts.

The central beam, A, extends out beyond the cross-beam C some distance, and near its forward end an oblong hole is made transversely

through this beam, as shown at *c*, Figs. 1, 2, and 3, through which hole is passed a bolt or clevis-pin, *d*, to the ends of which the horizontal clevis *g* is connected. Two rods, *h h*, are also connected at their forward ends to the clevis-pin, and these rods are rigidly fixed at their rear ends to the extreme ends of the forward cross-beam, C, as shown in Figs. 1, 2, and 3. Now, it will be seen that the brace-rods *h h*, being connected to the clevis-pin, and this pin being loosely passed through a hole in the central beam, these rods are really the draft-rods and bring the draft upon the cross-beam C. The clevis-hole *c* being elongated vertically, the pin *d* is allowed a free rising-and-falling motion in this direction, restrained only by the depth of this hole *c*.

Beneath the central beam, A, and connected to its extreme front end by a vertical bolt, *i*, is a brace-rod, *k*, the rear end of which is connected to the vertical bolt *m*, which secures the cross-beam C to beam A. This latter brace-rod is not connected to the draft-rods, but is intended as a brace for the central beam, A, and can only be practically used when the cross-beam C is placed beneath the beam A.

The rear end of central beam, A, projects out a short distance behind the elevated cross-beam C', and at this end a plow or shovel, E, may be attached, the stock E' of which is secured on one side of the beam A, behind the cross-piece C', while the inclined brace-rod F is secured on the opposite side of beam A, in front of this cross-piece, as shown in Fig. 1. In this manner the stocks or standards of the forward shovels, G G, and also the inclined braces of these stocks, are secured to their respective beams B B.

The stock E' of the middle shovel, E, Fig. 4, is curved, so as to bring this shovel directly under and in the same vertical plane with the central beam, A. The brace F of this stock is also curved in a similar manner and attached to the lower part of the stock E'. In this way both bars E' and F mutually brace each other in a lateral direction and stiffen each other, forming what may be called a "V-shaped brace" for the shovel E, consisting of two pivoted arms secured on opposite sides of the central beam, A, by means of transverse bolts *p p'*. The beams A B B are perforated, and so also are the shovel stocks and braces, to admit of the shovels being arranged in different posi-



tions, adjusted at any desired inclination, &c., according to the character of the crop it is desired to work.

The handles H H incline forward, and are attached at their front ends to the sides of the central beam by means of staples. The rear support for these handles is a bifurcated standard, J, which is bolted to the cross-beam C' and central beam, A, by a bolt passing through both beams. The upper ends of the standard J are perforated and receive a horizontal transverse brace-rod, s, which passes through the handles H, and has connected to its ends the vertical brace-rods t t, which are connected at their lower ends to the extreme ends of the elevated beam C', thus supporting this beam C' at its ends and adding great strength to it.

From this description it will be seen that the rods h h and k serve as braces for the cross-beam C, and as deflectors to prevent the corn or other crop from being thrown down under the shovels, and also, by means of the large hole c, they act as draft-rods, the whole draft or strain being thrown by them onto the front cross-beam, C, making it really the draft-beam, and throwing an equal draft on all the beams, which are thus pulled equally. The only time when an unequal strain can come on the center beam, A, is when the middle shovel, E, is in front of the side shovels and meets with any root, stone, or other resistance, when the draft would have a tendency to break the beam at the bolt-hole m. This is provided against by the rod or martingale k, which is connected to the bolt m and also to the front end of this central beam, A; and when such strain occurs the bolt i prevents the beam from splitting at the large hole c, as it would otherwise do, the invariable tendency being to thrust the clevis up and the beam down when the shovels strike. The clevis g being arranged horizontally instead of vertically, the vibratory motion of the trace produced by the step of the horse is not communicated to the beam A, as the clevis rides loosely in its hole c on its bolt d, which passes through this hole, but does not touch the beam A, being held in position by the two rods h h, and not by this beam, which only serves as a guide in my cultivator.

I am aware that in my patent of the 12th of March, 1861, two diagonal or oblique brace-

rods are arranged upon the cultivator-frame in such a manner as to brace the frame and the tongue of the cultivator; but there is no third brace, nor is there a vertical slot and vertically-shifting clevis pin or bolt.

I am further aware that in the patent granted to E. Bement, September 16, 1862, on a plow-beam, two brace-rods are arranged so as to bear the strain; but in this the clevis pin or bolt plays in a longitudinal slot in the direction of the pull by the team, and there is no third brace nor a vertical slot, as I show in my present cultivator.

I do not here claim, therefore, the braces as shown in my patent above referred to, nor do I claim the arrangement shown in Bement's plow; but

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The arrangement, in a cultivator, of the brace-rods h h and stay-rod k in such manner that the longitudinal strain upon the implement shall be thrown upon the side beams, B B, and front beam, C, when the implement is unobstructed by stones, &c.; but when the implement is obstructed by stones, &c., the sudden jar due upon the tongue A shall be relieved by the oblong slot c, and finally be sustained by the stay-rod k, all substantially in the manner set forth.

2. The arrangement, in a cultivator, of the automatically-shifting brace-rods h h, pin d, and vertical slot c, in the manner and for the purpose described.

3. The arrangement of the inclined stay-rod k, beam C, and tongue A, substantially as and for the purpose set forth.

4. A cultivator combining in its construction the tongue A, side beams, B B, upper and under slotted cross-beams, C C', V-shaped adjustable braces or stocks E E', brace-rods h h, and stay-rod k, the several parts being constructed and arranged as described.

Witness my hand and seal, in the matter of my application for patent on improvements in or on my cultivator patented March 12, 1861, this 20th day of January, 1863.

CHAS. W. S. HEATON. [L. S.]

Witnesses:

THEODORE DAUTH,  
W. H. STUART.