

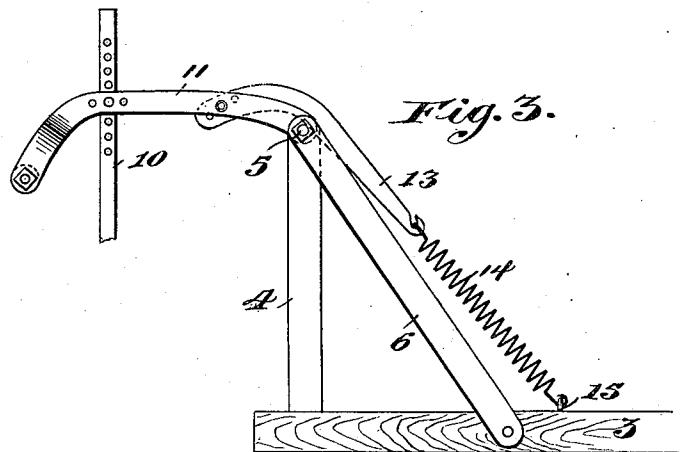
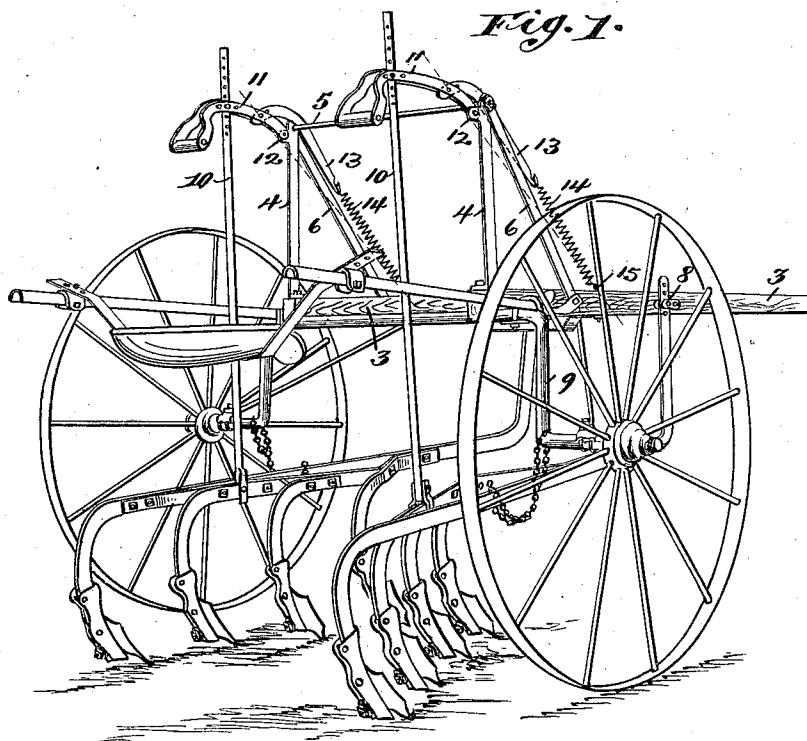
(No Model.)

F. E. DAVIS.  
CULTIVATOR.

2 Sheets—Sheet 1.

No. 575,754.

Patented Jan. 26, 1897.



Witnesses.

*S. D. Mann.*  
Frederick F. Goodwin

Inventor

Frank E. Davis  
By Offield, Towle & Lathbury  
Atty's.

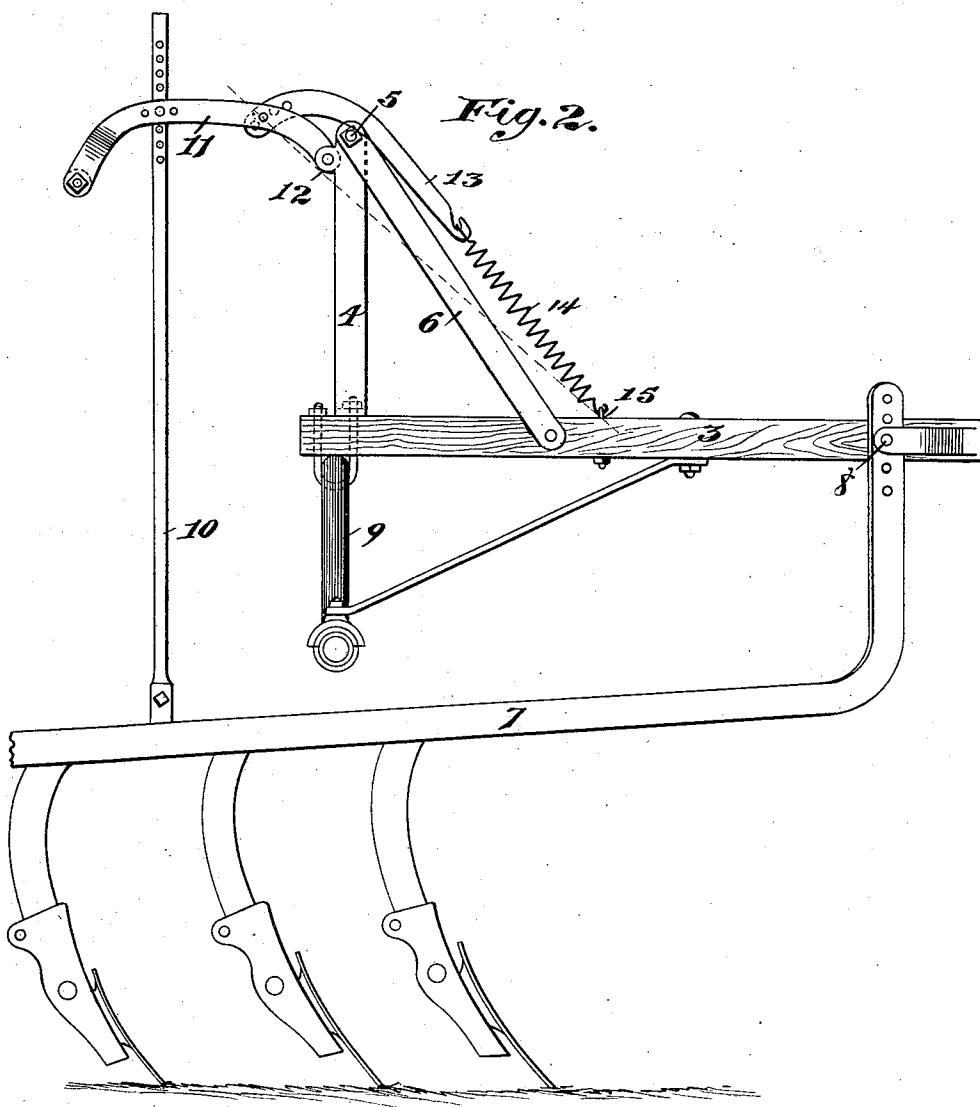
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Witnesses,

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Frederick F. Goodwin

Inventor;

*Frank E. Davis*

*By Offield, Fowler & Lithicum*

*Attn:*

# UNITED STATES PATENT OFFICE.

FRANK E. DAVIS, OF LA CROSSE, WISCONSIN.

## CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 575,754, dated January 26, 1897.

Application filed August 26, 1895. Serial No. 560,618. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK E. DAVIS, a citizen of the United States, residing at La Crosse, in the county of La Crosse and State of Wisconsin, have invented certain new and useful Improvements in Cultivators, of which the following is a specification.

This invention relates to an improvement in that class of cultivators in which the drag-bars or shovel-beams have a pivotal connection at their forward ends and a yielding or spring connection with the frame of the cultivator back of their pivotal connection, and the principal object of the invention is to so arrange the pivots of the mechanism containing the spring that said spring yieldingly sustains the drag-bars and may be made to assist in raising them and in such manner also that a lock is provided under ordinary pressure upon the spring.

The invention also consists in certain improvements in the particular construction and arrangement of the parts, as will be herein-after described, and more particularly pointed out in the claims.

In the drawings, Figure 1 is a perspective view. Fig. 2 is a side elevation, parts broken away and others omitted, showing a cultivator embodying my improvements. Fig. 3 is a broken elevation of a slightly-modified construction.

In the drawings the reference-numeral 3 represents the cultivator-frame, having rigidly mounted thereon the uprights or standards 4, preferably connected at their upper ends by the rod 5 and suitably braced to the frame by the diagonal braces 6.

7 represents the drag-bars, which are pivoted at 8 to the frame, and 9 represents the crank-axle. Rods 10 are connected at their lower ends to the shovel-beams, and at their upper ends they are adjustably connected with the hand-levers 11, the latter being pivoted either upon the rod 5, as shown in Fig. 3, or upon the lugs 12, as shown in Figs. 1 and 2, as desired. Links 13 are pivotally connected to these hand-levers 11 and curve forwardly over the connecting-rod 5 and are hooked at their front ends to springs 14, which extend diagonally downward and are connected to the frame 3 at 15.

The rods 10, the hand-levers 11, and the

links 13 are all preferably provided with a series of apertures to adapt them to be variably connected to their coöperating parts in order to vary the tension of the springs.

In Fig. 2 the parts are shown in the position which they assume when the shovels are in the ground, and in this position, it will be observed, the pivotal axis of the hand-levers 11 is above a plane passing through the pivotal connection of the hand-levers 11 and the links 13 and the point of connection of the springs 14 to the frame, as indicated by the dotted lines of said figure, thus providing a lock under ordinary conditions preventing the shovels from rising; but when an unusual obstruction is encountered by the shovels they will rise, thus carrying the pivotal connection of the link and hand-lever higher and breaking the lock. In this position also it will be noted that the links 13 contact with the connecting-rod or cross-bar 5, so as to provide a stop or lock against the further penetration of the shovels in the normal operation of the cultivator, but if one of the shovels meets an obstruction, causing it to penetrate deeper, the links 13 will be rocked or tilted over the cross-bar 5, thus swinging their lower ends upwardly and deflecting and elongating the springs 14. The same effect is produced by pressure upon the drag-bars to force the shovels deeper into the earth.

By means of the adjustments which have been provided the operation of the spring may be considerably varied. For example, the pivotal connection of the hand-lever 11 and links 13 may be so varied that the spring will constantly tend to lift the shovels out of the ground, but in all cases after the pivotal connection between said parts passes a line drawn through the pivotal connection of the hand-lever 11 to the frame and the connection of the spring to the frame the spring will raise the shovels out of the earth and hold them in the elevated position. The adjustments are usually so made that the weight of the drag-bars is counterbalanced by the spring. By this simple mechanism, arranged as above described, the springs serve to support the shovel-beams or drag-bars, assist in raising the shovels out of the ground, and afford a yielding connection between the frame of the cultivator and the shovel-beam or drag-bar,

thus modifying the shock when the shovels meet obstructions.

Having thus described my invention, what I claim as new, and desire to secure by Letters 5 Patent, is as follows:

1. In a cultivator of the class described, the combination with a wheeled frame, of a shovel-beam or drag-bar pivoted thereto, a yielding connection between the wheeled frame and 10 drag-bar, said connection comprising essentially a spring, a link, a hand-lever, and a rod pivotally connecting said hand-lever with the drag-bar and a stop for limiting the movement of the link in the downward movement 15 of the shovels, substantially as described.
2. In a cultivator, the combination with a wheeled frame, of a shovel-beam or drag-bar pivotally connected thereto at its forward end and a yielding connection between the frame 20 and the drag-bar in the rear of its pivot, said connection comprising a pivoted hand-lever, a spring, and a link pivotally connecting the hand-lever and the spring, a stop for limiting the movement of the link and the pivots on 25 the hand-lever being so arranged that the pivotal connection of the link may be carried below a plane passing through the pivotal connection of the hand-lever to its support and the point of attachment of the spring to the 30 frame, whereby to constitute a lock under ordinary pressure, substantially as described.
3. In a wheeled cultivator, the combination with a wheeled frame, of a drag-bar pivoted

thereto, standards mounted upon the wheeled frame, hand-levers pivoted to said standards, 35 springs connected to the wheeled frame in front of the standards, links pivotally connecting the hand-levers and the springs and connections between the hand-levers and the drag-bars, substantially as described. 40

4. In a cultivator, the combination with a wheeled frame, of drag-bars pivoted thereto, standards carried by the wheeled frame, a cross-bar connecting said standards, hand-levers pivoted to the standards, springs connected to the frame and links connected to 45 said springs and pivotally connected to the hand-levers in rear of their connections to the standards, substantially as described. 50

5. In a cultivator, the combination with a wheeled frame, of drag-bars pivotally connected thereto, standards mounted upon the frame and connected at their upper ends, 55 springs connected to the frame, hand-levers pivoted to the standards and links connected at one end to the springs and curved rearwardly over the connection between the standards and pivotally connected to the hand-levers whereby the standard connection is adapted to constitute a stop, and rods connecting the hand-levers with the drag-bars, 60 substantially as described.

FRANK E. DAVIS.

Witnesses:

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