(No Model.)

# F. A. HEAD.

## CULTIVATOR.

No. 403,587. Patented May 21, 1889.

Fig. 1.

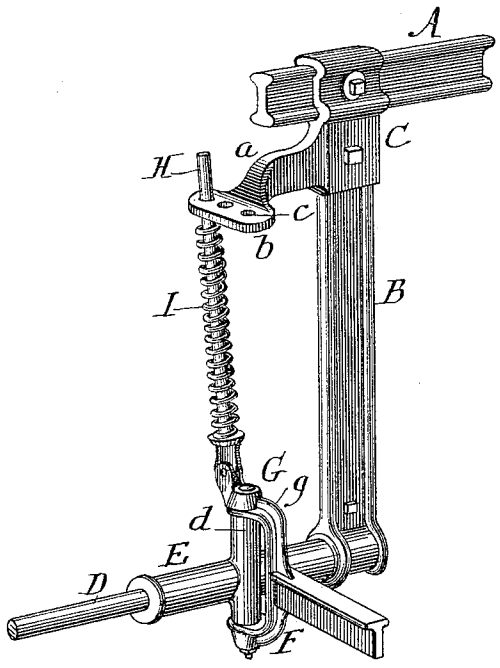



Fig. 2.

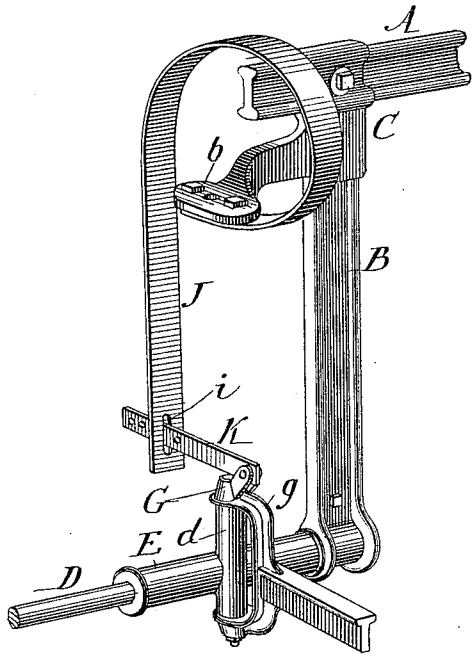



Fig. 3.

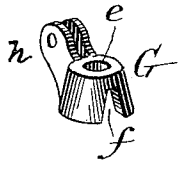
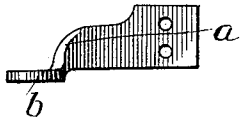



Fig. 4.




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# UNITED STATES PATENT OFFICE.

FREDERICK A. HEAD, OF ROCK ISLAND, ILLINOIS.

## CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 403,587, dated May 21, 1889.

Application filed January 24, 1889. Serial No. 297,401. (No model.)

*To all whom it may concern:*

Be it known that I, FREDERICK A. HEAD, residing at Rock Island, in the county of Rock Island and State of Illinois, and a citizen of the United States, have invented a new and useful Improvement in Cultivators, of which the following is a specification, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective of so much of a cultivator as is necessary to illustrate my invention, showing a coil-spring. Fig. 2 is a similar view showing another form of spring. Fig. 3 is an enlarged detail showing piece G. Fig. 4 shows a modification of the bracket.

It is common to use coil-springs in cultivators to partly counterbalance the weight of the shovel-beams and shovels. It is also common to use flat springs for the same purpose.

The object of my invention is to so construct a cultivator that different forms of springs can be used with the same cultivator simply by removing one kind of spring and inserting another kind of spring, which I accomplish as illustrated in the drawings and hereinafter described.

That which I claim as new will be pointed out in the claims.

In the drawings, A represents the upper horizontal part of an arched axle.

B is a vertical portion of the axle.

C is a casting provided with a socket to receive the part A and with a socket to receive the upper end of the vertical part, which parts A B are secured in place by bolts or screws. The lower end of B is secured to the wheel-spindle D. Projecting from the outside of the casting C is an arm or bracket, *a*, and its outer end is provided, as shown, with a flattened enlargement, *b*, in which are holes *c*.

E is a sleeve or pipe-box on the wheel-spindle, with which is conected a vertical tubular piece, *d*.

F is a casting to which the forward end of one of the shovel-beams is to be secured, as usual. This casting is pivoted upon the part *d*, to give the beam a lateral motion, as usual.

G is a casting provided with a central hole, *e*, to receive a pin. On the under side there is a slot, *f*, which engages with a rib, *g*, on the casting F.

*h* are two ears which are a part of the casting G.

H is a rod, the lower end of which is pivoted to the ears *h*, and the upper end passes through one of the holes *c* in the part *b*.

I is a coil-spring, the upper end of which comes in contact with the under side of *b*, and the lower end rests upon a shoulder near the lower end of the rod H.

The casting G is held in place by the pin which passes through the ears at the forward end of the casting F and through the part *d*.

As shown in Fig. 1, the spring is located forward of the joint which couples the beam to the axle, and the action of the spring has a tendency to counterbalance the weight of the beam and shovels. If it be desired to use a flat spring instead of the coil-spring, the rod H and spring I are to be removed. Then the casting G can be removed and turned around to the position shown in Fig. 2. One end of the flat spring J is then to be secured by bolts to the part *b*, as shown in Fig. 2. The other end of this spring is, as shown, provided with a slot, *i*.

K is a connecting-bar, one end of which is pivoted to the ears *h*. The other end passes through the slot *i*, and is held by a pin which passes through it.

As shown in Fig. 2, the pulling action of the spring J has a tendency to counterbalance the shovel-beam and shovels.

With my improvement the springs are interchangeable, the other parts of the cultivator remaining the same, and a manufacturer or dealer can furnish buyers with two styles of cultivators from the same stock by keeping on hand the two kinds of springs.

The arm or bracket *a*, which is provided with the enlargement *b*, might be made separate from the socketed casting C, and be bolted or otherwise secured to the vertical part of the arch, the gist of this part of my invention consisting in providing the vertical part of the arch of the cultivator with a bracket adapted to be used in connection either with a coil-spring, I, or a spring of another form, similar to J.

In Fig. 4 I have shown a bracket made independent of the casting C, and adapted to be secured to the vertical part of the arch.

Instead of a flat spring, J, a spring of some other known form might be used, arranged to operate in the same manner and adapted to be connected at one end to the arm or bracket *a*, and at the other end to the casting G. If desired, a link might be used between the arm K and ears *h*.

What I claim as new, and desire to secure by Letters Patent, is as follows:

1. In a cultivator, a removable piece, as G, adapted to be connected either with a rod, as H, or with a bar, as K, substantially as and for the purpose specified.

2. In a cultivator, an arm or bracket, as *a*, adapted to be secured to the arched axle, and a casting, as G, adapted to be connected with the joint which couples the shovel-beam to the axle, whereby either one of two forms of springs I and J can be used at pleasure in the same cultivator, substantially as and for the purpose specified.

3. In a cultivator, a socketed piece, C, provided with an arm or bracket, *a*, in combination with the parts A B of an arched axle, substantially as and for the purpose specified.

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Witnesses:
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