

(No Model.)

L. C. CHAPIN.  
WHEEL CULTIVATOR.

No. 285,797.

Patented Oct. 2, 1883.

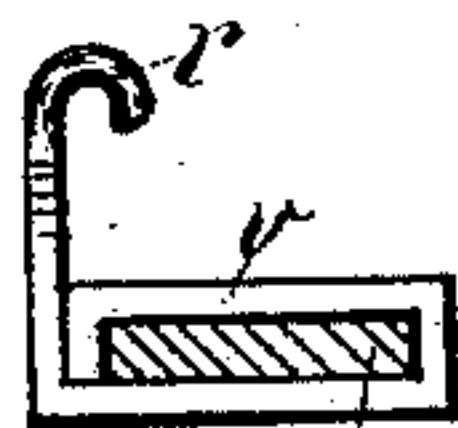
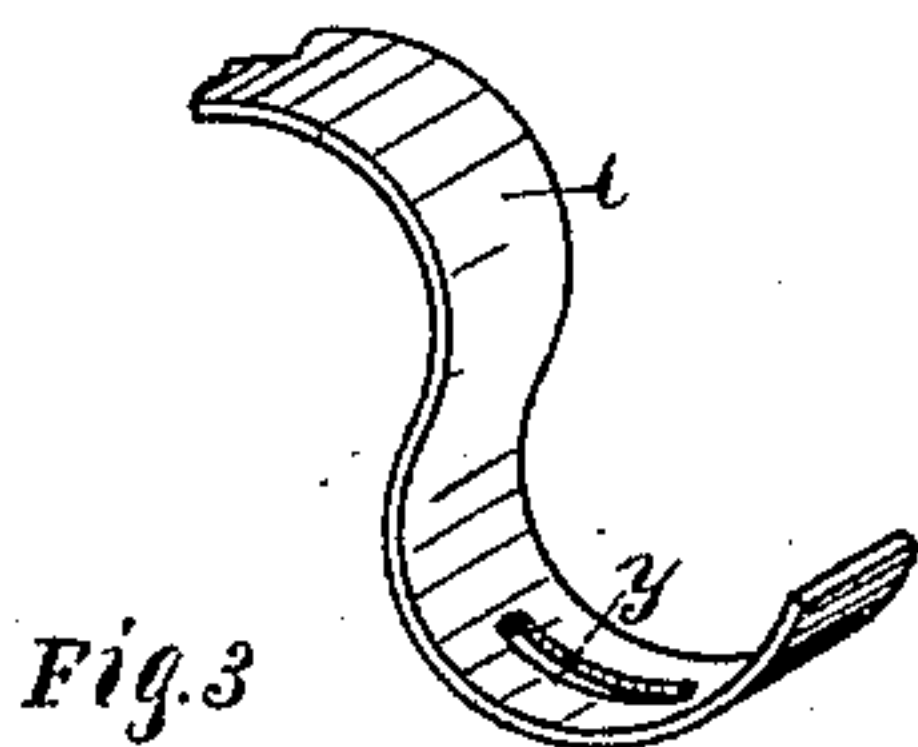
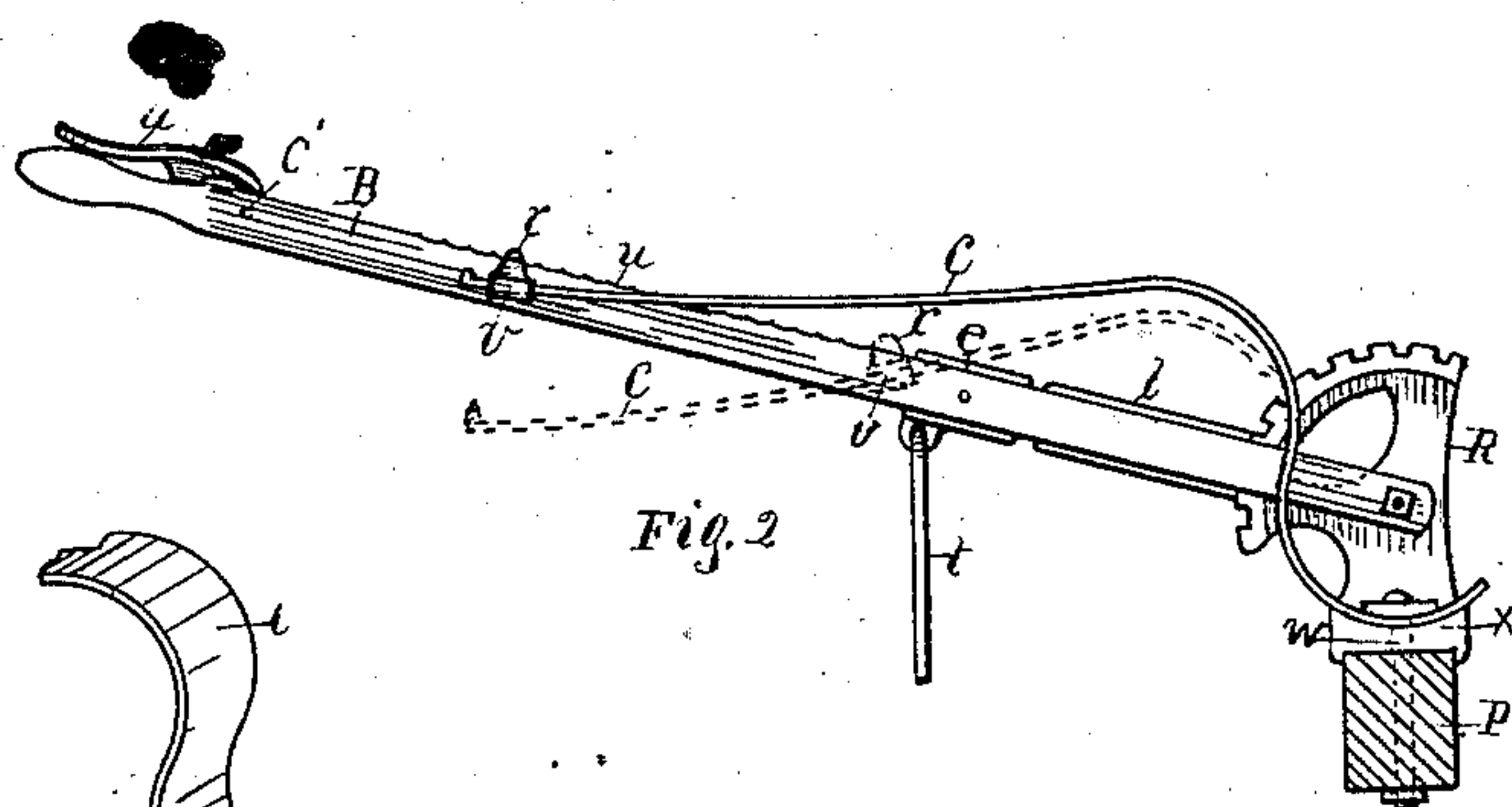
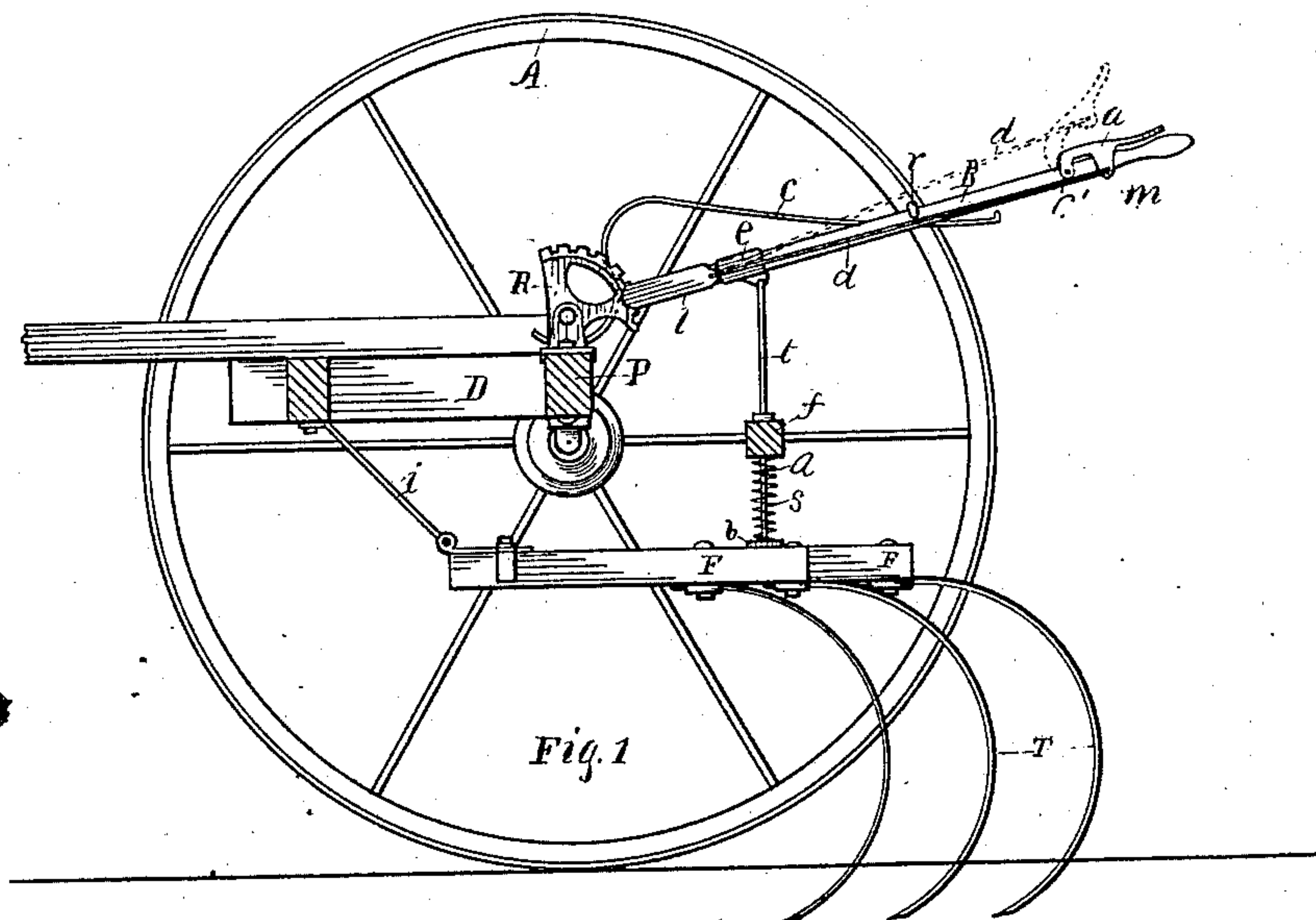


Fig. 8

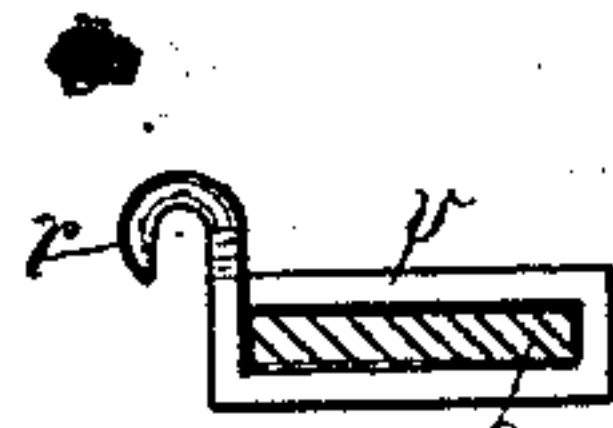


Fig. 4

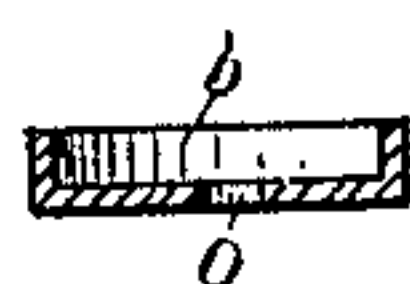


Fig. 5

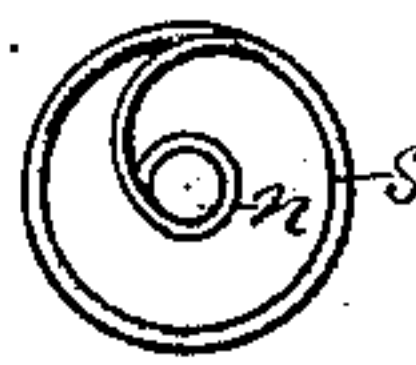


Fig. 6

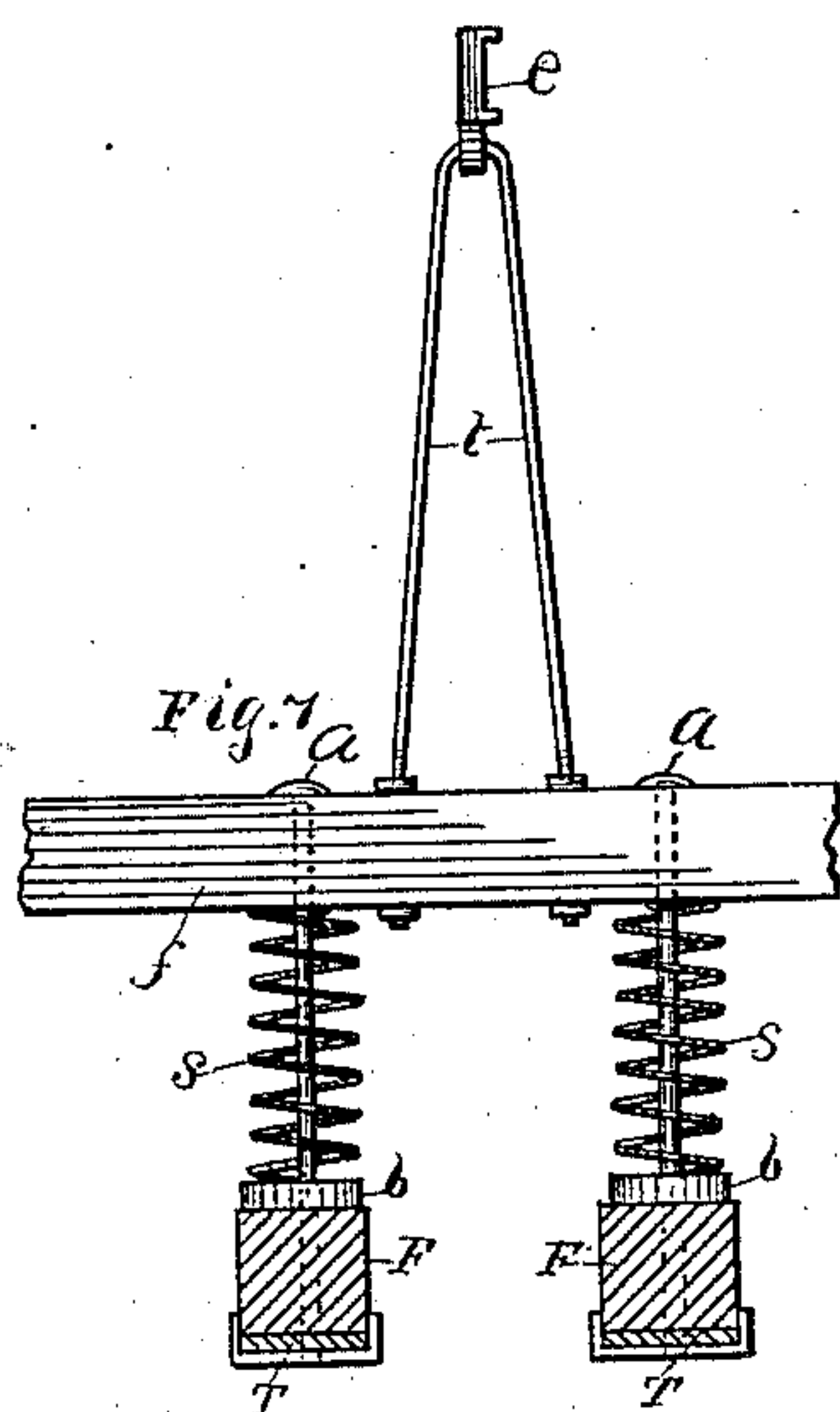


Fig. 7

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# UNITED STATES PATENT OFFICE.

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## WHEEL-CULTIVATOR.

SPECIFICATION forming part of Letters Patent No. 285,797, dated October 2, 1883.

Application filed June 2, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, LEBEUS C. CHAPIN, a citizen of the United States, residing at Kalamazoo, county of Kalamazoo, State of Michigan, have invented a new and useful Wheel-Cultivator, of which the following is a specification.

My invention has for its object certain improvements in wheel-cultivators to facilitate the operation and simplify construction.

The leading feature of my invention consists in combining independently-hinged tooth-bars having a spring located upon each, a cross-bar connecting the upper end of said springs, and a lifting-lever connecting with said cross-bar, with a steel spring pressure-bar so constructed and arranged in relation to the lifting-lever that a ready and convenient elastic control may be exerted on the springs of the independently-hinged tooth-bars.

In the drawings forming a part of this specification, Figure 1 is a cross-section and side elevation of the device; Fig. 2, a side elevation of the lifting-lever and spring pressure-bar, enlarged, looking from the opposite side to that in Fig. 1; Fig. 3, a broken lower end of spring pressure-bar in perspective; Figs. 4, 5, 6, detached parts hereinafter described; Fig. 7, a broken rear view of part of the cultivator, and Fig. 8 a change in the hook in Fig. 4.

D is the wheel-frame, F F independently-hinged tooth-bars, S S tooth-bar springs, f cross connecting-bar to said springs, B the lifting-lever, R the ratchet-wheel, and i the draft-rods to the hinging-rod, all, generally considered, well known in the prior state of the art. In the well-understood control of the springs S S by raising and lowering the lifting-lever and locking it with the ratchet R at different positions, to effect the desired result requires the constant exertion of the operator in soil of varying consistency and non-uniformity in surface. The best results are attained by an elastic control of the tooth-bar springs by means of a spring pressure-bar, C. This bar is made in the form of a letter S, with a rearwardly-extending arm, the whole made from elastic spring metal. The lower bow has an elongated slot, y, and is adjustably secured in a curved seat by the side of the

ratchet R, by a bolt located in said slot and through beam P of the frame D. By this means the bar C can be set at the most convenient angle to be operated, and to conform with the desired angle of the lifting-lever. The pressure of the bar C is downward. It is provided with a sliding hook, r, having a loop, v, Fig. 4, loosely located on said bar. The rear end of bar C is turned up to prevent loss of the hook r. By catching the hook r over the lifting-lever B at different points, (and locking the pawl out of the ratchet,) different degrees of elastic pressure may be exerted on the springs S S. The hook may be non-adjustable on bar C. When the hook r is at the location shown in dotted lines in Fig. 2, but little pressure is exerted. If desired, the upper side of the lifting-lever may be corrugated to receive the hook r. When desiring to use the lever B independent of bar C, the hook r may be disengaged therefrom, and the bar remains in position ready for use again. The lifting-lever B is connected with the cross-bar f by a bail, t, hinged to casting e of said lever.

As a means of locking the spring-pawl located in casting l of lever B out of the ratchet R, I provide a dog, a, pivotally connected with lever B at C', or the end opposite its handle, said point of pivoting forming its fulcrum. A rod, d, connecting with the pawl, is pivotally connected with an extended lug of the dog a at m, said point being radially removed from the fulcrum. Thus when the dog is thrown down against the lever B in throwing the pawl out of the ratchet, as in Fig. 1, said dog is held in said position and the lifting-lever remains free. Each independent tooth-beam is provided with a cast-metal pocket or dish, b, having a center bolt-hole, o, the same appearing in section in Fig. 5. The lower end of the coil-spring S sits detachably in the dish b, which holds said spring from displacement without any rigid connections with bar F. The upper end of spring S is formed into a center eye, n, upon which the cross-beam f is located. Bolts a a are located through cross-beam f, through eyes n, and through holes o of the dishes b, and thence through bars F F.

In constructing my cultivator I design to use two sets of tooth-bars and lifting-levers,



one each side of the driver's seat, as in other similar devices.

Having thus described my invention, what I claim as new is—

5 1. The combination, with independently-hinged tooth-bars, a spring on each of said bars, a cross-bar connecting said springs, and a connecting lifting-lever, of a spring-metal pressure-bar having the rearwardly-extending  
10 free end provided with the sliding hook, substantially as set forth.

2. The combination of vertically-playing hinged tooth-beams, the tooth-beam springs, a lifting-lever and means-connecting it with  
15 said springs, the spring-metal pressure-bar having the S-shaped slotted end, a curved seat therefor, and means for connecting the free end of the pressure-bar with the lifting-lever, all substantially as described.

20 3. In a wheel-cultivator, a lifting-lever having a spring-actuated pawl provided with an operating-dog fulcrumed to said lever, and connected with the pawl by a rod pivoted to the dog at a point radially removed from said  
25 fulcrum, substantially as specified and shown.

4. In a wheel-cultivator, the combination of a lifting-lever and vertically-playing tooth-beams with the S-shaped spring pressure-bar having the free end provided with the sliding hook, substantially as set forth.

5. The combination of vertically-playing tooth-bars and springs, a lifting-lever and connecting means, the spring pressure-bar, and an operating pawl-dog adapted for raising the pawl from the ratchet and holding it  
35 raised, substantially as described and shown.

6. The combination of the ratchet-casting having the curved seat, the lifting-lever, and the spring pressure-bar having the slotted S-shaped end for adjustable location in said  
40 curved seat, and the rear free arm provided with the hook, all substantially as set forth.

In testimony of the foregoing I have hereunto subscribed my name in the presence of two witnesses.

LEBEUS C. CHAPIN.

Witnesses:

WM. MILTON LEE,

GEO. C. BYINGTON.