(No Model.)

L. C. CHAPIN.

WHEEL CULTIVATOR.

No. 285,797. Patented Oct. 2, 1883.

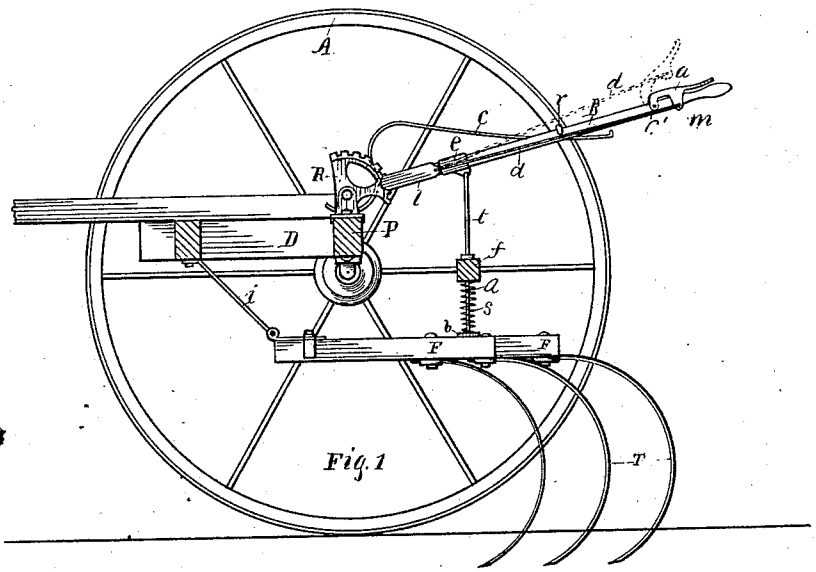


Fig. 1

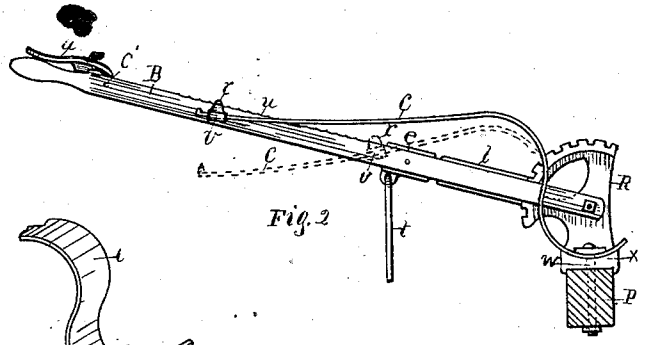


Fig. 2

Fig. 3

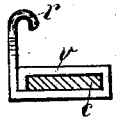


Fig. 3

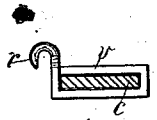


Fig. 4

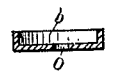


Fig. 5

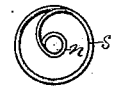


Fig. 6

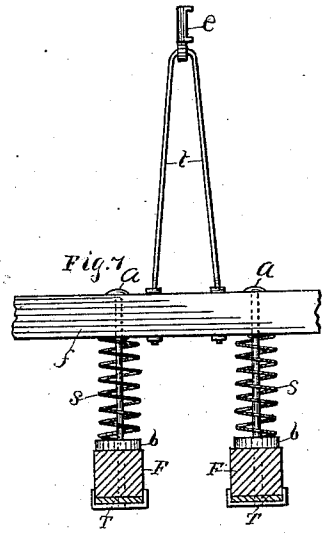


Fig. 7

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UNITED STATES PATENT OFFICE.

LEBEUS C. CHAPIN, OF KALAMAZOO, MICHIGAN.

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—

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 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 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.

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 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 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 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.